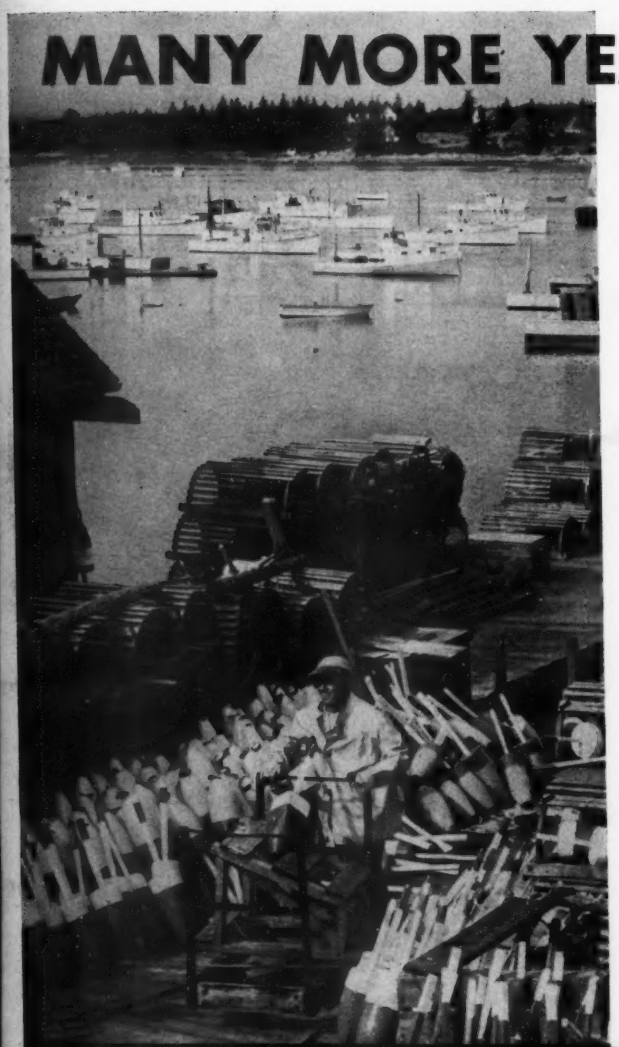
1957

NATIONAL FISHERMAN

JUNE
1957

MANY MORE YEARS OF SERVICE



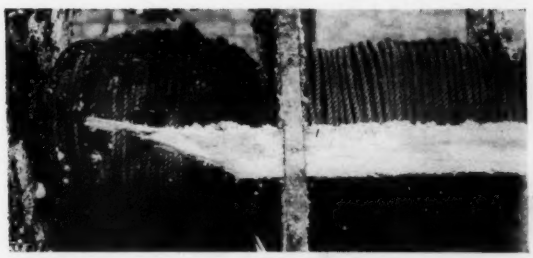
COLUMBIAN ROPE COMPANY
Auburn "The Cordage City", N. Y.

Because Columbian Copperizing Resists Marine Growth

When rope is constantly in salt water, it needs the anti-fouling protection that Columbian Copperizing gives it. Tests under actual fishing conditions prove that Columbian Copperized Rope has no equal in resistance to marine growths. Fishermen everywhere have made the familiar sea-green Columbian Copperizing Rope their favorite because they know it gives better service over a longer life.

This rope has also the Columbian Fungi-Static treatment — an anti-rot process which prevents the growth of fungi, mildew and mold. With these two Columbian processes — Copperizing and Fungi-Static — combining against rope-decay, it's no wonder that Columbian Manila is the longest-lasting rope you ever used. Columbian Rope is also non-kinking, abrasion resistant, lubricated against internal heat and friction. It is made from only the finest Manila fibres, graded at Columbian's own Philippine Islands bodegas. Remains flexible after repeated soakings. And backed by 50 years experience in every kind of rope-making from hawser to twine. There's a Columbian supplier nearby — or write to the Columbian Rope Co., Auburn, N. Y.

Columbian pioneered the manufacture of rope and twine of Nylon, Dacron, Polyethylene and other synthetics. Columbian sets the standard in these products.



Tests of coils submerged in the sea over a period of months show the effectiveness of Columbian Copperizing treatment against marine growth. Such special treatments are applied in addition to Columbian Fungi-Static.

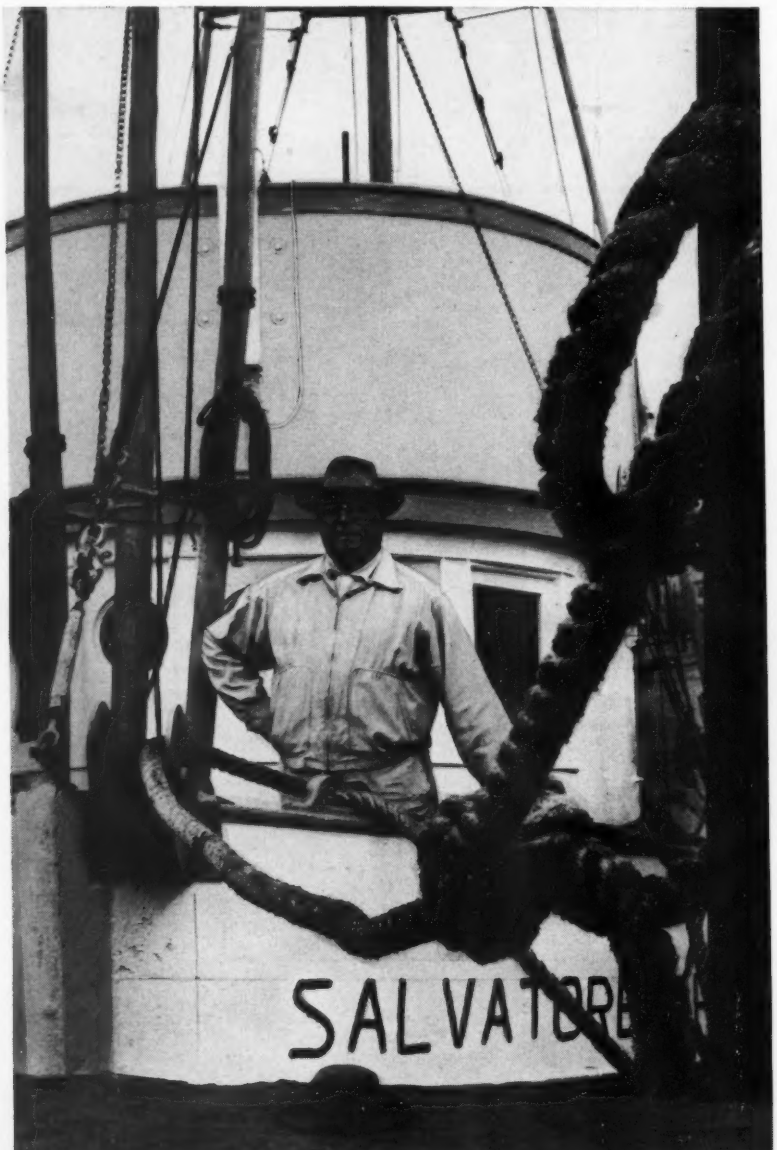
ROPE
COLUMBIAN
TWINES
TRADE MARK

ENGINEER'S FIELD REPORT

PRODUCT RPM DELO OIL

FIRM M/V SALVATORE PADRE
San Francisco, Calif.

Original bearings still good after 15 years!



Mr. Salvatore Piazza, above, owner-skipper of M/V Salvatore Padre, has operated his 60-foot fishing boat for 15 years—using RPM DELO Oil exclusively. Vessel's 110-horsepower Atlas diesel still has original rod and main bearings. Engine of this vessel has been torn down twice for inspection—only parts replaced were a set of piston rings, installed in 1947. Mr. Piazza says, "This engine is still very clean and smooth running. RPM DELO Oil has kept it that way for 15 years. I wouldn't use any other."

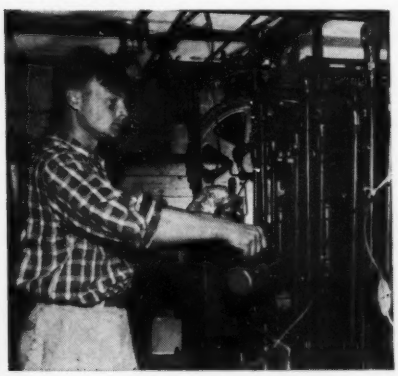
LUBRICATING OILS RPM DELO

TRADEMARK "RPM DELO" AND DESIGN REG. U. S. PAT. OFF.

STANDARD OIL COMPANY OF CALIFORNIA, San Franciso 20

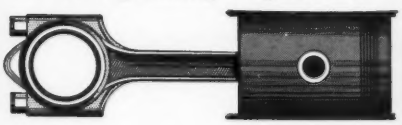
THE CALIFORNIA OIL COMPANY, Perth Amboy, New Jersey

M/V Salvatore Padre, operating out of San Francisco, goes as far south as Mexico fishing for salmon, albacore, sardines, crab.



Engine Room is supervised by Mr. Piazza's son. Latest engine inspection showed no carbon, sludge, or deposits of any kind.

Why RPM DELO Oils reduce wear, prolong engine life



Metal-adhesion qualities keep oil on engine parts, running or idle. Anti-oxidant resists formation of lacquer. Detergent keeps parts clean. Special compounds prevent corrosion of any bearing metal. Inhibitor resists foaming.

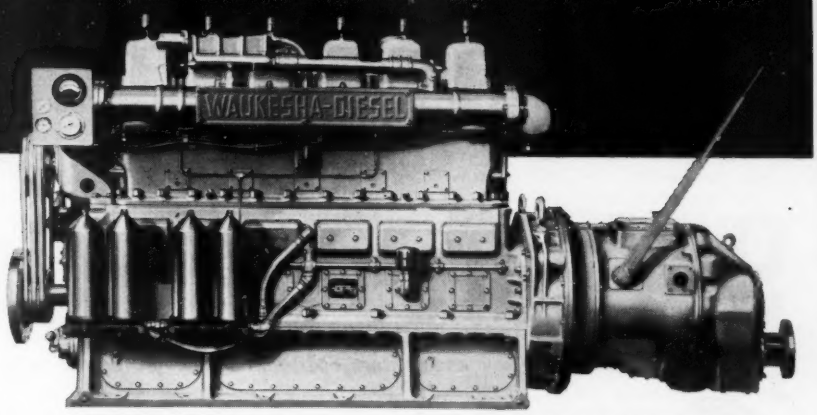
For More Information or the name of your nearest distributor, call, or write to any of the companies listed below.

STANDARD OIL COMPANY OF TEXAS, El Paso

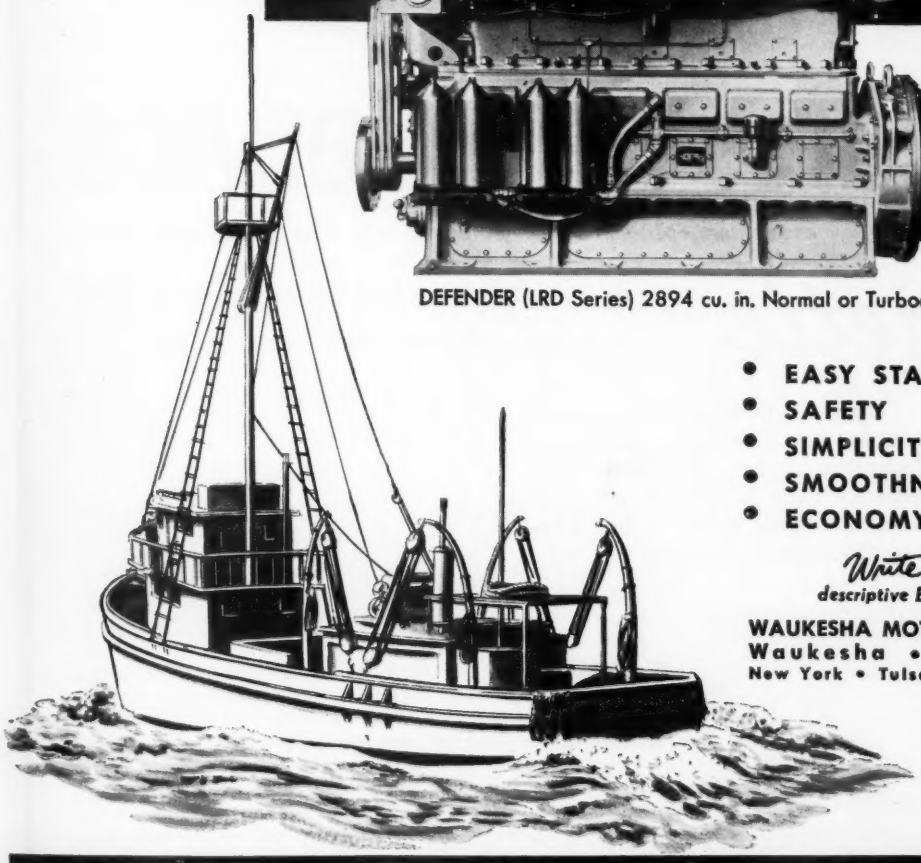
THE CALIFORNIA COMPANY, Denver 1, Colorado

WA Diesel

MARINE ENGINES up to 990 hp



DEFENDER (LRD Series) 2894 cu. in. Normal or Turbocharged DIESEL



- EASY STARTING
- SAFETY
- SIMPLICITY
- SMOOTHNESS
- ECONOMY

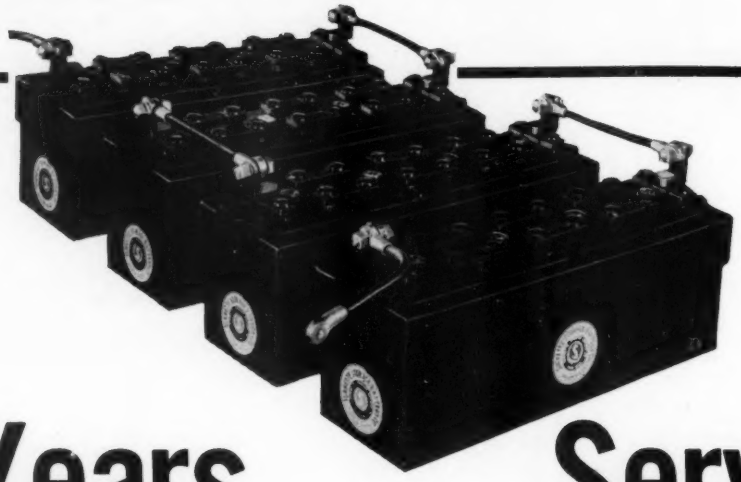
Write for detailed descriptive Bulletin 1691

WAUKESHA MOTOR COMPANY
Waukesha • Wisconsin
New York • Tulsa • Los Angeles

342-R

WAUKESHA normal and turbocharged diesel marine engines

Engine Model	Engine Type	No. Cyls.	Bore and Stroke	Displ. Cu. In.	MAXIMUM RATING 24-Hour Duty
Reliance	Normal	12	8½ x 8½	5788	665 horsepower @ 1200 rpm
	Turbo	12	8½ x 8½	5788	990 horsepower @ 1200 rpm
Defender	Normal	6	8½ x 8½	2894	335 horsepower @ 1200 rpm
	Turbo	6	8½ x 8½	2894	480 horsepower @ 1200 rpm
Wanderer	Normal	6	7 x 8¼	1905	240 horsepower @ 1200 rpm
	Turbo	6	7 x 8¼	1905	315 horsepower @ 1200 rpm
Resolute	Normal	6	6¼ x 6½	1197	195 horsepower @ 1600 rpm
	Turbo	6	6¼ x 6½	1197	260 horsepower @ 1600 rpm
Vigilant	Normal	6	5¼ x 6	779	150 horsepower @ 1800 rpm
	Turbo	6	5¼ x 6	779	195 horsepower @ 1800 rpm
Cutwater	Normal	6	4¼ x 5	426	100 horsepower @ 2000 rpm
	Turbo	6	4¼ x 5	426	120 horsepower @ 2000 rpm

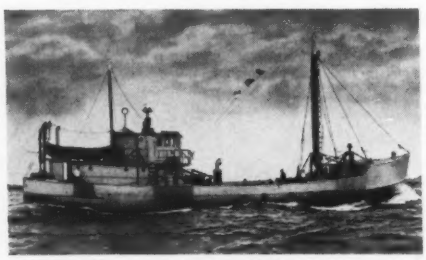


9 Years Service

Lawrence C. McEwen, well known fleet operator of fishing draggers tells of his battery experience.

"Surrette MARINE BATTERIES HAVE GIVEN US THE BEST BATTERY SERVICE I'VE EVER SEEN!"

• *The Kingfisher* — 110 volt Surrette Batteries were installed when this vessel was new in the spring of 1947 and are still providing electrical current, after *Nine Years Service*. Says Mr. McEwen: "These Surrette batteries have seen uninterrupted service for nearly ten years! This is unusually long service for fishing boat batteries."



• *The Curlew* — 110 volt Surrette Batteries were also installed on this vessel in 1947 and were replaced this winter after 9 years service. Mr. McEwen states that "we recently replaced the original set that had given us over nine years of faithful, trouble-free performance. We also have Surrettes on our third vessel the Golden Eagle, they have been on the boat for more than six years and this original set of Surrette Batteries is still performing powerfully and dependably."

"With the increase in electronic equipment and electrical devices on modern draggers, the strain on storage batteries is ever increasing.
We feel that we have received outstanding service from our SURRETTE BATTERIES, and will continue to use them as they have given us the best battery service I've ever seen."

Signed: *L. C. McEwen, Managing-Owner*
McEwen Fleet
Gloucester, Mass.

Write for literature or name of nearest distributor

Surrette MARINE BATTERIES
JEFFERSON AVENUE SALEM, MASSACHUSETTS

June 1957 Vol. 38 No. 5

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NATIONAL FISHERMAN

The Fishing Industry Magazine

More Teamwork Needed in Promoting Seafood

Some frank comments on the need for more teamwork in merchandising and advertising of seafood were made recently by Leo Weil of the American Seafood Distributors Association.

Weil said that during the next ten years, sales of frozen foods may rise to well over seven billion dollars—treble the estimated sales for 1957. He then posed the question "what part of this tremendous figure will the fish industry receive?"

"Without teamwork", Weil stated, "it is my opinion our share will be comparatively small. Why should one make such a bold statement? We certainly have made progress in the past few years. Have we not done an excellent job with consumer packaging? Haven't we both fish sticks and portioned fish to our credit? Is it not a fact that a few progressive producers have even gone in for national magazine advertising? I will buy that and still say 'so what'? Our weakness is lack of teamwork in our industry. There is too much rugged individualism.

"There is no comparable research or get-togetherness in our industry similar to that of other industries—examples are the milk, meat, and citrus people. These associations come up continuously with excitingly different campaigns that move their merchandise."

The need for greater emphasis on merchandising of seafood was highlighted at the recent National Fisheries Convention. Its new president, Aldo Casaretto stated: "We of the fisheries industry have historically underrated and underpriced our products, and as a result we have undersold fish. The time has come for us to take the initiative in setting a definite objective for ourselves," he continued, "and I suggest that for 1957-58 we make this goal an increase of one pound per capita in the sale and consumption of fish products of all kinds. To attain this objective will require selling—hard selling—by all elements of the industry."

There are encouraging signs that the fishing industry is beginning to realize the need for a better promotional job. It is evident that the industry is getting conditioned to the necessity of spending fairly substantial sums for this purpose.

The North Atlantic Fillet Council has been formed to advertise fillets; the New Bedford Seafood Council is stepping-up its scallop advertising campaign; on the Pacific Coast a new industry organization is making plans to promote the sale of albacore tuna. These are a few examples of recent efforts to increase the consumption of fish.

It is interesting to note the British Trawlers' Federation has embarked on an $840,000 campaign to make Tuesday a second fish day of the week. Getting people to eat fish twice a week would boost sales tremendously.

The fishing industry has a potential clientele that few industries can equal; it offers a wide variety of products that are tasty, nutritious and easy to prepare, with dietary appeal. The number one job before the industry is to bring its wares to the public's attention, in a forceful manner. It's an undertaking in which every segment of the fisheries has a stake, and one which requires the cooperative effort of the entire industry.

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Southern Representative: William C. Walters, P. O. Box 619, Atlanta 1, Georgia—Drake 8-0003

NASSCO Standardizes on Fairbanks-Morse Opposed-Piston Diesels for New Fleet of Tuna Clippers

More room in the hull . . . for bigger pay load

—Why build a tuna clipper to operate at a greater profit, then burden it with excess bulk and weight before it leaves the ways?

—Why sacrifice valuable pay load and supplies capacity for the weight and space of an outsized engine and its accessories?

These were the first questions asked by National Steel and Shipbuilding Corporation before the first keel plate was laid for its fleet of modern tuna clippers. It answered these basic questions by standardizing on the compact six-cylinder, 960 horsepower Fairbanks-Morse Opposed-Piston Marine Diesel. This elimination of excess bulk and weight is one of the reasons why these 127-foot vessels have a 340-ton capacity plus ample sea stores.

The first three of these O-P powered vessels are now proving the added advantages of dependable power, higher speeds and increased maneuverability. Two more clippers on the NASSCO ways will soon provide further proof of the *plus performance* of this modern fleet that has standardized on Fairbanks-Morse Opposed-Piston power.

NASSCO standardized on F-M Opposed-Piston Diesel because:

The Opposed-Piston engine is the only marine diesel that offers all the design advantages of:

Two-cycle design

. . . that eliminates many wearing parts and their attendant adjustment, service and eventual replacement. The O-P presents the ultimate in this respect by eliminating more than 40% of the wearing parts found in engines of comparable horsepower.

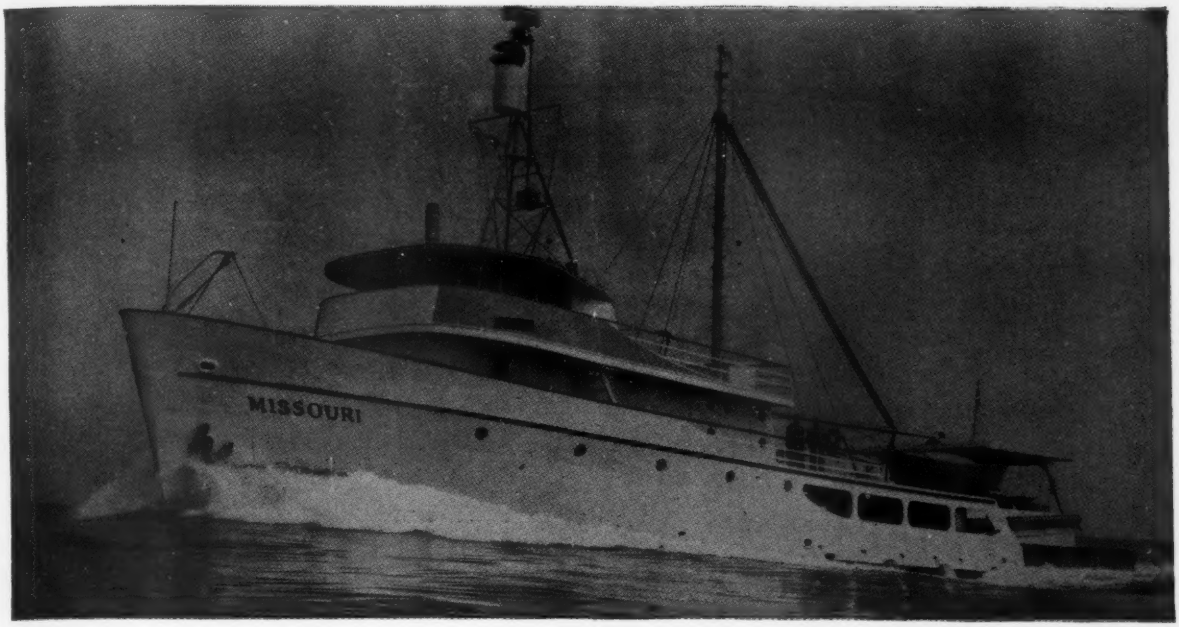
Uniflow scavenging

. . . eliminates crosscurrents and dead pockets . . . provides greater horsepower and increased thermal efficiency that give the utmost in fuel oil economy.

Opposed-Pistons

. . . of equal weight in a single-cylinder liner react to the pressure of combustion at equal speeds in opposite directions. Together with contra-rotating crankshafts, these design features produce an unequaled smoothness of responsive power, practically vibration free.

F-M Motors and Pumps . . . have also been specified as standard in the new NASSCO fleet of tuna clippers for top dependable pumping service.



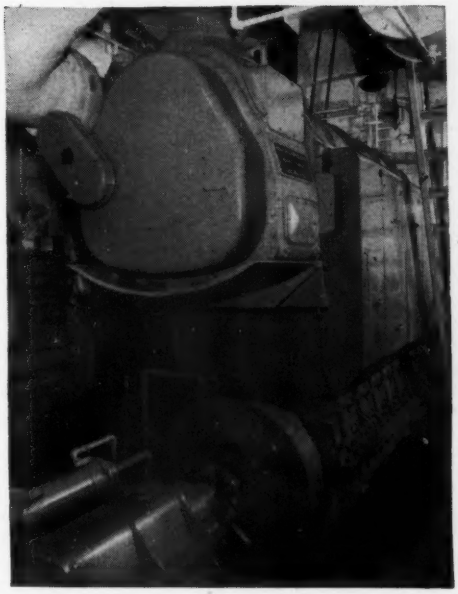
Latest design from bow to rudder

Hull: These new fishermen have an efficient hull form designed as the result of extensive model test studies.

Rudder: The design of rudder features one of the recent high-speed N.A.C.A. airfoil shapes.

Main Engine: The heavy-duty 960 hp. F-M Opposed-Piston Diesel was selected for modern efficiency, reliability and economy.

Behind these exclusive design advantages stands the record established by more than 6,000,000 installed Opposed-Piston horsepower. It proves the reliability . . . economy . . . and efficiency of the Fairbanks-Morse Opposed-Piston Marine Diesel.



Engine-room view of the 960 hp. Model 38D Opposed-Piston Marine Diesel specified as the standard propulsion engine for the new fleet of NASSCO tuna clippers.

FAIRBANKS-MORSE

a name worth remembering when you want the BEST

DIESEL AND DUAL FUEL ENGINES • DIESEL LOCOMOTIVES • RAIL CARS • ELECTRICAL MACHINERY
PUMPS • SCALES • HOME WATER SERVICE EQUIPMENT • MOWERS • MAGNETOS

The Lyco VII *is one of seven identical 67-foot shrimp trawlers equipped with Styrofoam and built by Diesel Engine Sales Co.*

"For good, low-temperature insulation you can't beat Styrofoam*"

. . . says Casey Zorn, manager of Lyco Shrimping Fleet, Aransas Pass, Texas

"We put 1,800 square feet of Styrofoam (a Dow plastic foam) on each boat, using blocks 9 feet long, 12 inches wide, and 2 inches thick. Its light weight and ease of handling made the installation move rapidly, enabling us to hold expense for all materials and labor to $1,150 per boat.

"Another thing I like about Styrofoam is its high resistance to water and rot. There's no depreciation or maintenance. It doesn't pack or shift within the walls, and doesn't crumble. Its use lets our boats stay out longer and keeps the catches fresh. I am very pleased with its performance."

Learn how this truly modern material can save time, money and fish for you. Get your copy of the Styrofoam data book. Write: THE DOW CHEMICAL COMPANY, Midland, Michigan–Plastics Sales Department PL1725K-1.

*Styrofoam is a registered trademark of The Dow Chemical Company.

YOU CAN DEPEND ON DOW

FISHERY PROGRESS

► Uniform Pacific Fish Regulations

Legislation to amend North Pacific Fisheries Act of 1954 so as to enable Federal authorities to carry out obligations of North Pacific Fisheries Convention has been sent to Congress by State Department. The States of Washington, Oregon and California have this year enacted legislation to provide necessary State authority in waters contiguous to their coasts. Canada, by Order in Council, effective May 1, 1957, took similar action with respect to Canadian citizens.

The congressional bills would extend geographical area in North Pacific Ocean in which Secretary of Interior is authorized to issue certain fishery regulations. At present he may issue regulations applicable to stocks of fish in North Pacific waters north of Dixon Entrance and west to 175° east longitude. Under the amendment this power would be extended over area of North Pacific Ocean north of Juan de Fuca Straits.

The measure is designed to permit control of net fishing on high seas; uniformity of trolling seasons and troll salmon size limits and uniform protection of petrale sole during period they congregate in compact schools for spawning and when their physical condition and market value is low. West Coast fishermen have complained that some American fishermen meet salmon runs coming into Alaskan and North Pacific waters on high seas, thus preventing them from reaching spawning waters in streams of Northwest.

► "Company Fishermen" Employees

Internal Revenue Service has ruled that "company fishermen", who are furnished boats and gear by organization to which they supply fish, are employees for purposes of Federal unemployment tax; and "independent fishermen" are not.

► Mesh Regulation for Cod Nets

Notice of proposed changes in mesh regulations for trawl fishermen operating off New England coast were carried in *Federal Register* of May 30. The regulations apply to what is officially known as Subarea 5, and were recommended by International Commission for Northwest Atlantic Fisheries.

It is proposed to require cod fishermen to use nets with mesh no smaller than 4½". Same exemption rules as for haddock will apply to those who take cod incidentally with other catches.

Under existing regulations, haddock fishermen must use nets with mesh no smaller than 4½", but fishermen seeking other species who incidentally catch some haddock have in the past been exempt from net regulations up to 5,000 pounds or 10 percent of total catch per trip. Under proposed regulations, this exemption would be continued but fishermen would have alternative of operating under new exemption which would allow them to take haddock not exceeding 10 percent of all trawl-caught fish during any one year.

► Canned Sardine and Tuna Packs

With about 30,000 cases of sardines packed to May 25, Maine is off to a much better start than last year, but far behind big Spring runs of 1953 and 1954. First catches are the preferred little fish.

Southern California tuna receipts to June 1 totaled 72,114 tons, 16% less than last year. Although canners' stocks are smaller and movement of tuna into consumption is up fully 10%, concessions continue on private label orders for albacore and lightmeat.

► Fisheries Loan Fund Applications

A total of 234 applications for fishery loans, amounting to $9,838,-861, had been received by Fish and Wildlife Service on May 20. Of these, 99 have been approved for a total of $2,842,217; and 31, amounting to $502,466, have been declined because of ineligibility or other reasons.

► Groundfish Fillet Imports Drop

Imports of groundfish and ocean perch fillets and blocks into United States during first four months of 1957 totaled 47.6 million pounds, compared with 51.5 million pounds for same period of previous year. Canada led all other countries exporting fillets to this country with 34.1 million pounds.

► Radioactivity in Fish

U. S. Atomic Energy Commission has renewed a two-year contract with University of Hawaii increasing its grant for investigation of radioactivity in marine organisms. Instead of using one radio isotope at a time, as Marine Laboratory has been doing previously, emphasis will now be on use of mixtures of radioactive materials as encountered in wastes from atomic power plants.

Future experiments outlined will attempt to find out what happens to fish and other marine organisms that live their entire lives in surroundings slightly more radioactive than they are now.

► Breaded Shrimp Quality Standard

A 60-day trial period is now in effect to give processors, buyers, distributors, and other interested parties an opportunity to try out proposed quality standards for frozen raw breaded shrimp, and to send their observations to Department of Agriculture. If there is substantial agreement on proposed standards, a notice of final rule making will be published at end of 60-day period.

► Fish Advisory Committee Meets

The American Fisheries Advisory Committee, at its fifth meeting held recently in Biloxi, Mississippi, recommended expansion of activities and services aimed at increasing markets for fishery products of domestic origin. Assistant Secretary of Interior Ross Leffler is chairman of the Committee and presided at the meeting.

► Shrimp Imports Decline

U. S. imports of all shrimp (fresh, frozen, canned, and dried) from all countries for January-February 1957 amounted to 9.9 million pounds, as compared with 14.7 million pounds for same period in 1956. Shrimp imports from Mexico for January-February 1957 totaled 7.3 million pounds, against 13.1 million pounds for same months of 1956.

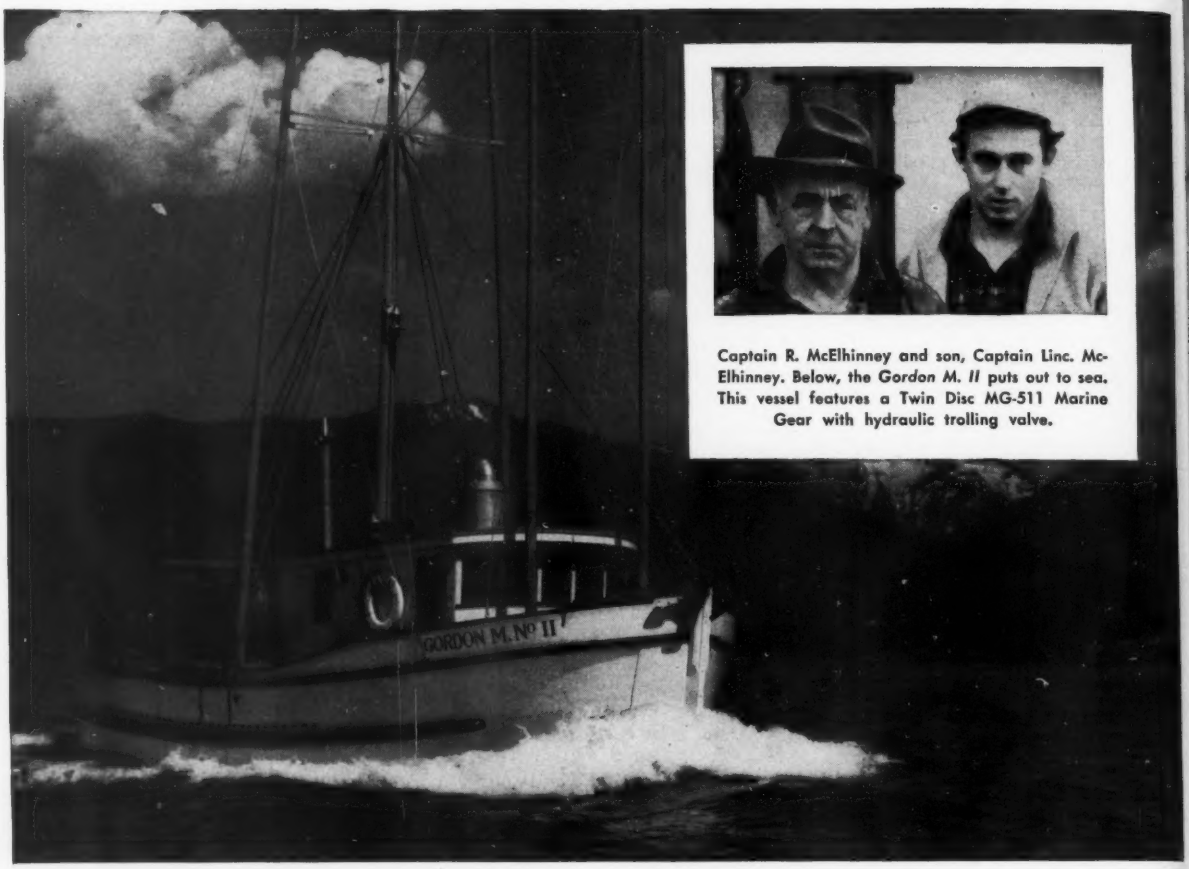
► Radio-Pasteurization of Fish

Eisenhower "Atoms for Peace Program" and new atomic age with its potentially revolutionary effect on food processing has been brought home to fishing industry through nationwide study of feasibility of using nuclear radiations for preservation of fish. Two processing techniques, "radio-pasteurization" and "cold-sterilization", born of studies in atomic energy and promising possible enhancement of iced-storage life of fish, are under study at five laboratories of Technological Section, Bureau of Commercial Fisheries.

Radio-pasteurization, low-level radiation technique which kills majority of bacteria in a product, appears at present to be most promising process and is being emphasized in these studies. Coupled with other processing methods such as refrigeration and prepackaging, this technique may revolutionize present methods of marketing, making available for first time to inland population fresh unfrozen fish, of a quality equivalent to that enjoyed by coast and lake-shore dwellers.

► Canned Mackerel Exports Up

Canned mackerel exports during March amounted to 4.3 million pounds, largely destined for Philippines. Exports during first three months of year totaled 9.4 million pounds, about 4 times quantity exported during all of 1956.



Captain R. McElhinney and son, Captain Linc. McElhinney. Below, the *Gordon M. II* puts out to sea. This vessel features a Twin Disc MG-511 Marine Gear with hydraulic trolling valve.

"A very successful season—thanks to the MG-511 Marine Gear," *says Capt. R. McElhinney, Vancouver, B. C.*

"The *Gordon M. II* had a very successful season last year and we attribute a fair part of this to the Twin Disc MG-511 Marine Gear—particularly the gear's hydraulic trolling feature," says Captain R. McElhinney, the vessel's owner.

"As an indication of the versatility which the MG-511's trolling feature offers," Captain McElhinney adds, "we made the 200 miles from Campbell River to Seattle with 23 tons of fish and averaged 8½ knots. Yet we can troll right down to 2 knots and less for trolling operations."

The *Gordon M. II* is a modern 48-foot troller with a 13¼-foot beam. It swings a 3-bladed 44" x 34" propeller for a top speed of 9½ knots loaded. Power is furnished by a Murphy ME-100 Diesel Engine rated at 100 hp at 1200 revolutions per minute.

The Twin Disc MG-511 Marine Reverse and Reduction Gear has a 3:1 reduction ratio and is equipped with a Twin Disc hydraulic trolling valve (optional with the MG-511). The trolling valve permits oil pressure in the forward clutch cylinder to be dropped automatically from 140 psi to 40 psi and, under manual adjustment, down to 20 psi. In the case of the *Gordon M. II*, it is possible to turn the propeller as low as 12 rpm.

The Twin Disc MG-511 Marine Gear also features such advantages as an unusually short length (less than 18"), Rubber-Block Drive, oil-actuated, oil-cooled multiple-plate clutches, straddle-mounted gears on anti-friction bearings, and finger-tip control. It is adaptable to marine engines rated to 240 continuous hp at 2100 revolutions per minute.

For complete details on the popular MG-511 Marine Gear, write for Bulletin 307-A, Twin Disc Clutch Company, Racine, Wisconsin.

BIGGER HAULS, SAFER NAVIGATION WITH AN RCA FISHFINDER!

RCA Model LAZ-16 Fishfinder

You can cut fishing time and reduce unprofitable "dragging" with this compact electronic device. First fishfinder with large cathode-ray tube, the LAZ-16 supplies a sharply detailed continuous scope presentation of a single fish or a whole school, the sea bed and other underwater objects down to 320 fathoms.

The RCA Fishfinder performs rugged double duty as a navigation aid when used as a depth indicator. It warns of underwater hazards that damage valuable gear, gives precise indications of bottom conditions.

You'll find RCA Fishfinders adaptable to many different fishing applications. Installation is low in cost, and easy pull-out indicator unit is simple to service. All models are sea- and spray-waterproofed, and unaffected by varying climatic conditions.

Complete specifications, prices and application data will be sent on request.

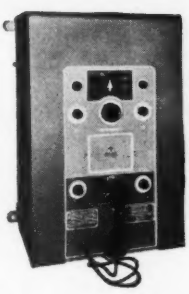
RCA Tmk(s) ®
Radiomarine

RADIO CORPORATION of AMERICA
RADIOMARINE PRODUCTS
75 Varick Street New York 13, N.Y.

OTHER RCA ELECTRONIC AIDS FOR THE FISHING FLEET

CR-105 RADAR

RCA Radar is designed for compact, cost- and power-saving installation aboard fishing boats. Easy to use, ideal for close-in or open sea navigating.



ET-8050 RADIOTELEPHONE

RCA Radiotelephones keep you in touch with home port offices, other fleet units. Talk ship-to-shore, between ships, calling and distress frequency.

LAZ-17 RECORDING DEPTHSOUNDER

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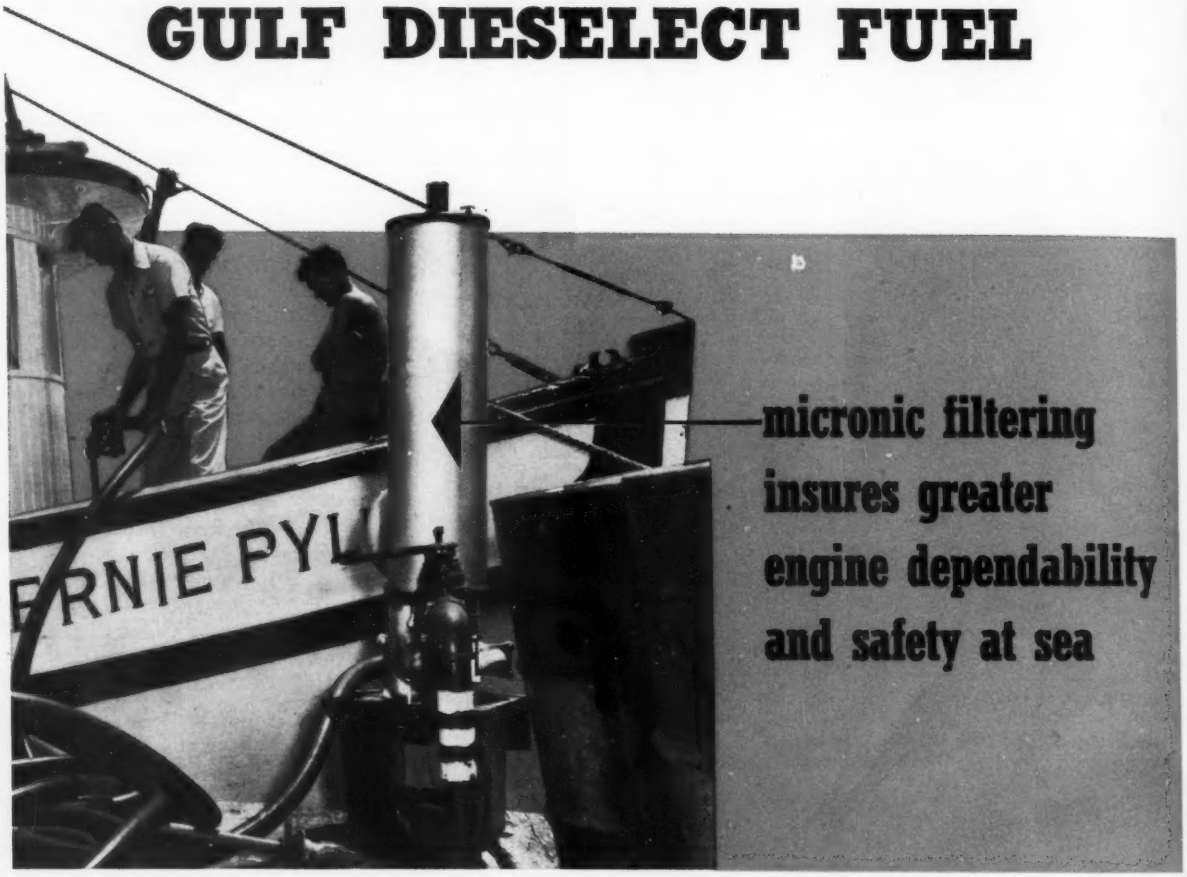

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How to Protect Your Boat from Marine Borers

By William J. Deed, Naval Architect

A hundred million dollars a year—that's the loss on an average over the years to United States ships, docks, bridges, etc. from boring worms and their kind—and the vast fleet of fishing vessels suffers its share. Lobster pots, stakes for net markers driven into the soft bottom especially in shallow water, cars for lobsters, docks and floats, are food for these pests, too. Any wooden structure which is to be in the water for a period of time should be protected.

About 20 years ago, 1937 to be exact, there was a great inroad of marine borers all along the New England coastal waters and up along the Canadian shores as well. At Sydney, Nova Scotia, marine borers completely honeycombed a new $90,000 coal barge with six-inch yellow pine planking in only eight weeks. The loss was terrific all along the coast.

Many have the mistaken idea that borers are not active in Northern waters, but it is only their shorter breeding season which makes it appear so. The breeding season lasts for only about a month in Arctic waters, about three months on the New England coast, in Virginia waters about six months, while in Florida it lasts the entire year. The Pacific Coast has a long season, while in Alaska the breeding season is about six months long. The temperature of the water regulates this.

Borers on the West Coast make holes as long as six feet, and three-quarters of an inch in diameter, while those on the Atlantic Coast usually bore tunnels about three feet long. Tests have proved that borers will cross seams, contrary to general belief that they will remain in the same plank until it is completely honeycombed, though the surface will show nothing out of order. Long study has proved that the borers will cross cracks up to a width of one-eighth of an inch, but not wider.

Not only do the borers attack vessels, but they actually eat away docks, piling, bridge foundations, marine railways, etc., especially in salt, brackish waters. In a given locality these pests may be very plentiful one year, and none may appear the following year. Dock piling and structure under water is best protected against the borers and like pests by creosoting, but this treatment is not used to any great extent on boats because of the added weight, odor, dirt and the fact that creosoted lumber cannot be properly painted.

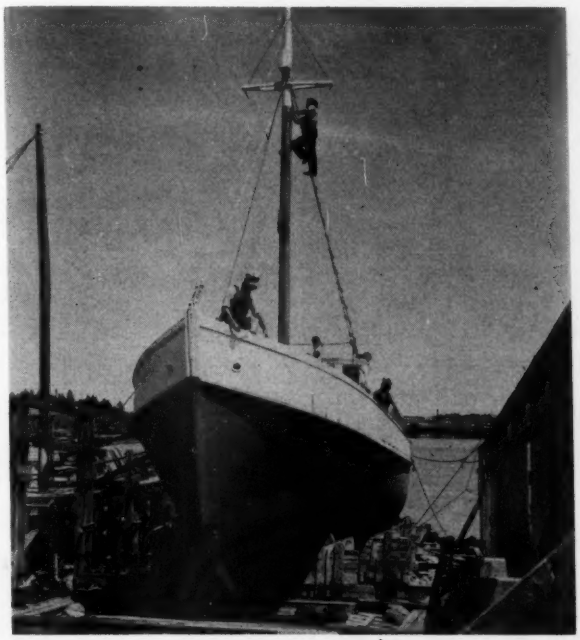
When the tiny Teredo boring worm enters unprotected wood, his tail remains at the small hole on the surface while he grows longer and fatter, as he eats his way into the wood. He must have sea water to live. The surface may not indicate that the Teredo is there, but the inside may be full of tunnels and worthless as a structural member of the vessel. The baby Teredo is very small and hard to detect, being only about one hundredth part of an inch long at birth. Its life expectancy is one year and a half.

In addition to the Teredo, the best known of these sea-going termites among the marine borer family are the Limnoria, which are most destructive. They are about the size of a grain of rice, and look like a louse. These pests are found in every climate and have horny boring jaws and seven sets of legs with hooked claws. They can eat into soft woods such as pine, fir or spruce at the rate of an inch a year.

Then there is the Chelura, like a lobster in appearance, which follows up the Limnoria, enlarging the small holes it made as it proceeds into the wood. Another is the "putty bug", which likes to eat the caulking out of the seams of a boat; it is found in both fresh and salt water.

Anti-Fouling Copper Paint Is Good Weapon

Admittedly it is not easy to avoid the hundreds of marine borers when they are very numerous and on the warpath. Keeping every bit of the area under water well protected by anti-fouling copper paint, using a worm shoe on the bottom of the keel and the use of subtances impregnated with elements poisonous to worms, will help. Several agencies, both government and private, have been investigating these subjects for many years, and it is hoped that they soon will come up with a solution.



Boat being painted in the boatyard of Connors, Bros., Ltd., Black's Harbour, New Brunswick.

Of greater importance than it appears in the battle against marine borers is the simple precaution of making sure that every square inch of area is covered by copper paint, even where the wedges and small blocks are placed when the vessel is hauled out on the railway, and under the keel and where the paint is scraped off. Don't think that any old paint will do as long as the wood is covered; lead paint won't protect against marine borers.

Copper paint prevents the boring worm from entering wood, but it is very important to keep every bit of the bottom of a boat well covered, for when Winter ice has scraped off the paint, the borer gets a chance to worm his way into the wood. Even copper sheathing a vessel's bottom does not absolutely guarantee protection, for it takes but a slight lifting of the copper on the underbody somewhere to provide the entrance for the borer. Once he gets the invitation to enter, the borer does not delay, and nothing can get him out. There are more than 300 different species of borer.

In warm Southern waters the underbody of a boat should be thoroughly coated with protective copper paint more than once a season. This is one operation that could well get more attention. It will save you money.

Keeping a boat in fresh water for a period of at least two weeks kills the borers, and when a vessel is hauled out of the water they die in about 48 hours. Painting over the tiny holes also kills the borers by smothering them. These methods are so simple that one wonders why more owners don't resort to them. On some vessels that sink after springing a leak, it might be found that the wood to which sea cocks are fastened is but a shadow of its original form, because of borer infestation.

(*Continued on page 34*)

The "Independence", third of nine 127' steel tuna clippers constructed recently by National Steel and Shipbuilding Corp. of San Diego, Calif.

National Steel Tuna Clippers Are Prefabricated

"San Juan" is latest of nine 127-foot vessels built at San Diego; "United States" lands capacity maiden trip

"They're the Cadillacs of the fishing fleet!" That's how Capt. George Soares of San Diego, California, describes his tuna clipper *Dominator* and her sister ships, built by National Steel and Shipbuilding Corporation of San Diego.

Second of a new class of 127', high speed, welded steel tuna clippers designed and constructed at National Steel, the *Dominator* has completed a number of trips to the distant South American fishing grounds. "As far as I'm concerned," says owner Soares, "this is the perfect tuna boat. She is 1½ knots faster than the average clipper, has exceptional bait capacity and is an able sea boat."

It's a rare thing when you can get a group of fishermen to sit down together and agree on any one thing. But in San Diego, where the big white tuna boats rest between trips, tuna men agree that "those National Steel vessels are real fine ships!" They admire these vessels because they are big, fast, economical to operate, and have everything that it takes for profitable fishing. In addition, they are designed to provide improved livability and comfort for the crew.

The series of National Steel clippers which has aroused such interest in the West Coast fleet began with the *Cabrillo*, which was launched for Capt. Joseph Soares in Sept., 1954. She was the first new clipper to join the San Diego fleet in more than two years.

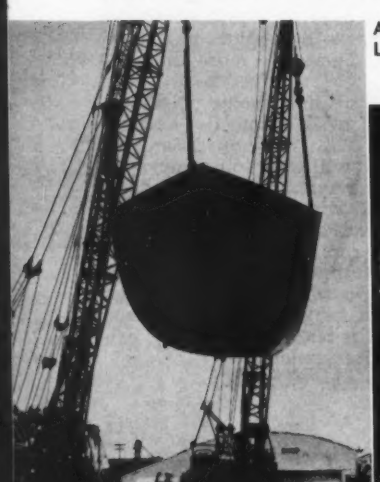
The *Cabrillo* was followed by the *Dominator*, and then the yard launched the *Independence; Concho; Missouri*, captained by George Stevens; *Westport*, commanded by Capt. Joe Rogers; *Elsinore*, skippered by Capt. Bill Martin; and *United States*, captained by Ed Da Silva. The *San Juan*, another vessel in the series, was scheduled to be launched June 4, and still another tuna clipper is under construction.

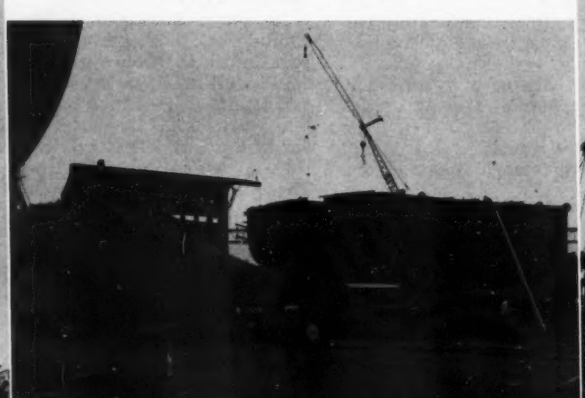
Handles Well in Heavy Weather

After coming in with 340 tons of fish from a 43-day voyage, Capt. Pete Giacalone had high praise for the *Independence*. "The engine ran extremely smooth at high speed with no vibration," he said. "It is well designed and set up in the vessel for quick and economical maintenance. The entire layout of the vessel is done with an eye to efficient maintenance."

He said the *Independence* cruises at 11 knots for maximum fuel economy, compared to 9 or 9½ for most tuna clippers. Capt. Giacalone also reports that the *Independence* handles extremely well in heavy swells and bad weather.

Assembling prefabricated sections of National Steel tuna clippers: Left, hoisting lower bow section into place; Center, stern and midships sections; Right, bow section.





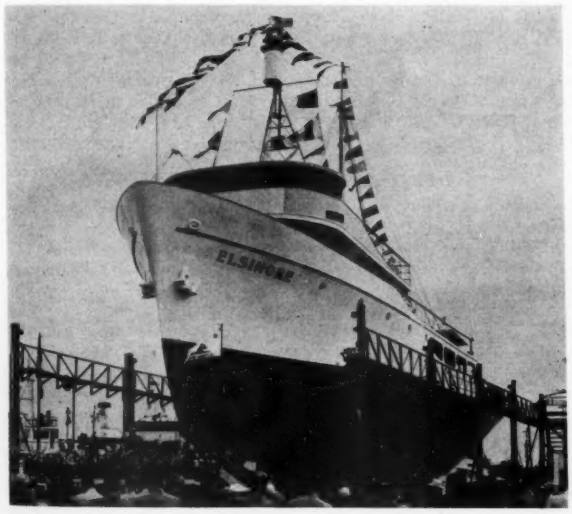
Each of the last seven tuna clippers built by National Steel is incorporated. The *Westport*, for instance, has 13 individual owners, plus about 10% held by National Marine Terminals, National Steel's boat operating division. National Marine Terminals provides the technical "know-how" for investors, affording on-the-spot supervision of the vessel and its operations.

Specifications of Boats

The "National" tuna clippers are one design, with slight variations. They are 127' overall, 30' 6" beam, 14'.6" depth, and carry 340 tons of fish. Their fuel capacity is 48,551 gallons, with 4,000 gallons of fresh water storage and 1,600 gallons of lube oil capacity. The boats have accommodations for 15 men, and can cruise about 10,000 miles.

The hulls are all steel, electrically welded, and feature a longitudinal framing system and built-in corrosion resistance. The efficient hull form is the result of extensive model test studies at the University of Michigan. Scantlings, structural details and welding are in general conformance with ABS requirements. The rudder design features one of the recent high-speed N.A.C.A. airfoil shapes.

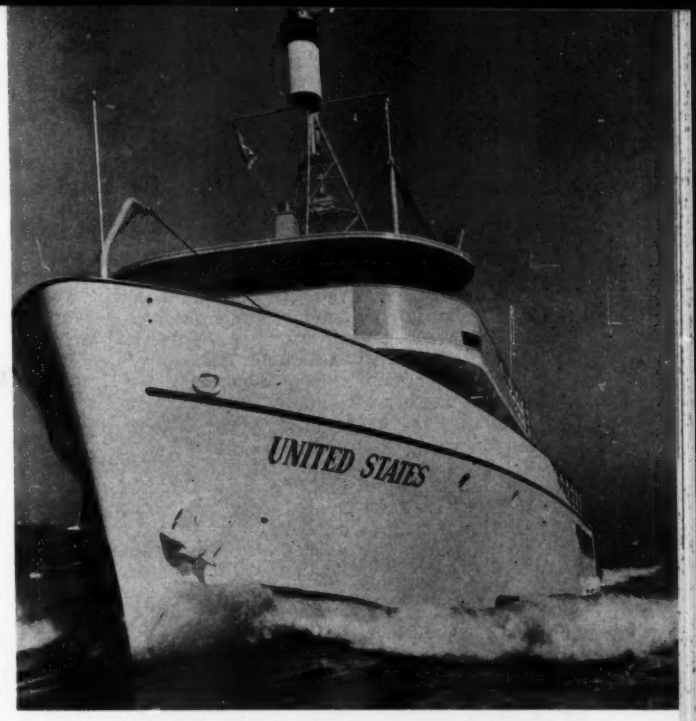
An unusual feature of these tuna clippers is the deep box keel which extends below the hull in a fashion similar to wooden vessels. This keel dampens rolling and aids steering in following seas. At the stern the box section keel is extended to form a strong and rigid rudder shoe. The sternpost is fabricated of plate and is well streamlined and faired into the hull. A band of extra-heavy shell plate on each side extends from the turn of the bilge down to the keel to give strength and rigidity to the entire skeg assembly.



The "Elsinore", seventh 127' steel tuna clipper constructed by National Steel and Shipbuilding Corp.

All the vessels in the 127' tuna clipper series are prefabricated. They are built in seven principal sections, with the two bow and one stern sections being constructed in the open right beside the launching ways. The inner bottom, midships and deckhouses are built in the structural shops and craned to assembly at the launching site. All sections of the vessels are blocked in place and fitted to ¼" tolerance before welding.

Designed to achieve the greatest possible economy at high speed over long distances with large fuel and cargo capacity, National Steel's 127' tuna clippers have the traditional high bow and low afterdeck, which is almost awash when the bait tanks are filled. The main engine and auxiliaries are located forward under the wheelhouse.



A CAPACITY MAIDEN TRIP OF 340 tons was landed last month by the tuna clipper "United States" of San Diego, Calif.

There are six brine wells on each side of the shaft alley. All but the last two aft have regular 24" high insulated coamings. Bait is carried in all but two wells furthest forward. Fuel may be carried in these and in the two wells furthest aft. The bait and brine wells under deck hold 291 fish tons, while bait boxes above deck have a capacity for 50 fish tons.

The vessels have several safety provisions for flotation

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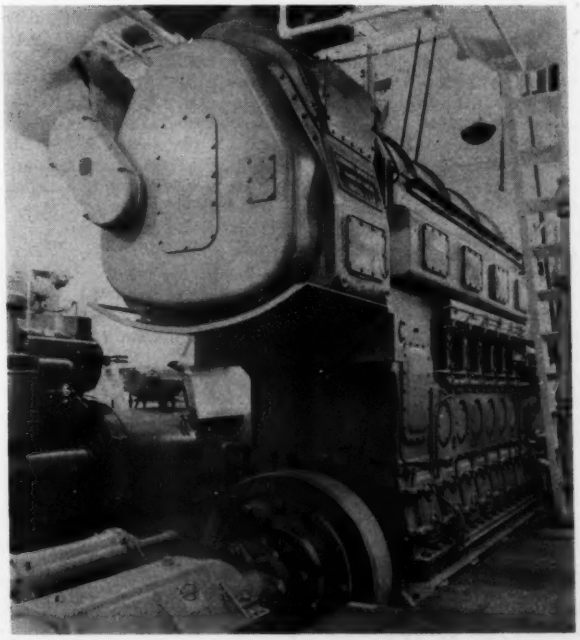


Engine room in 127' steel tuna clipper "United States", showing her 960 hp. opposed-piston Fairbanks-Morse Diesel, 3:1 Western Gear Sea-Master reduction gear, and 191 hp. Murphy Diesel auxiliary engine.

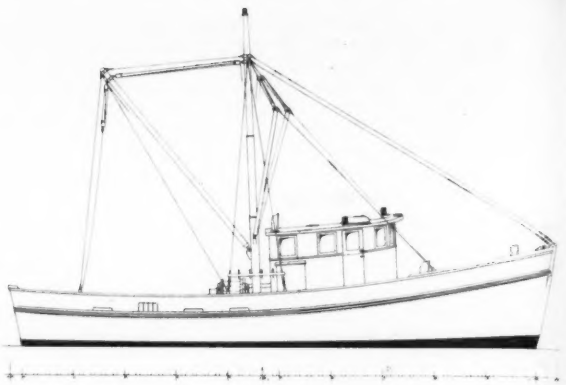
New Shrimper Design Has Wheelhouse Farther Aft

The accompanying plans by Marine Architect Kenneth L. Smith, 332 Wakeman Road, Fairfield, Conn., show a 48′ 9½″ shrimper designed for Capt. Larry Colby, to fill his requirements for a "big little boat" to be used primarily off both the East and West Coasts of Florida. Inasmuch as her owner feels that "a dollar can be made with a hook and line," she will be used at times for snapper fishing and will have sockets in her rail cap, port and starboard, for mounting Warren Red Snapper Reels.

The requirements of Capt. Colby called for the wheelhouse to be farther aft than is customary in shrimpers, this reflecting his earlier experience in the New England fisheries.

The vessel has a waterline length of 45′ 5″, beam of 15′ 1½″ and draft of 6′. Displacement on the designed waterline is 33.25 long tons. The shrimper's construction is rugged with frames being 2″ x 4″ white oak on 12″ centers and floor timbers sided 4″ on each frame throughbolted to the keel and frames. The keel and stem are yellow pine and oak sided 8″. The sheer clamp is 2″ x 6″ yellow pine doubled and the shelf is 4″ x 4″ yellow pine. The planking is selected fir to fiinish 1¾″. There are five bilge stringers of 2″ x 6″ yellow pine and the ceiling is 1⅛″ hard pine. Decking is 2″ x 3″ edge grain fir.

Power for the vessel will be furnished by a Model 6071A General Motors Diesel driving 2¾″ Tobin Bronze tailshaft and 42″ x 34″ Columbian propeller through 3.75 to 1 reduction gear, to give her an estimated speed of 9.5 knots. Her stuffing box is by Columbian, and she has Goodrich Cutless rubber stern bearing. The engine exhaust is carried up through the vessel's steel mast.

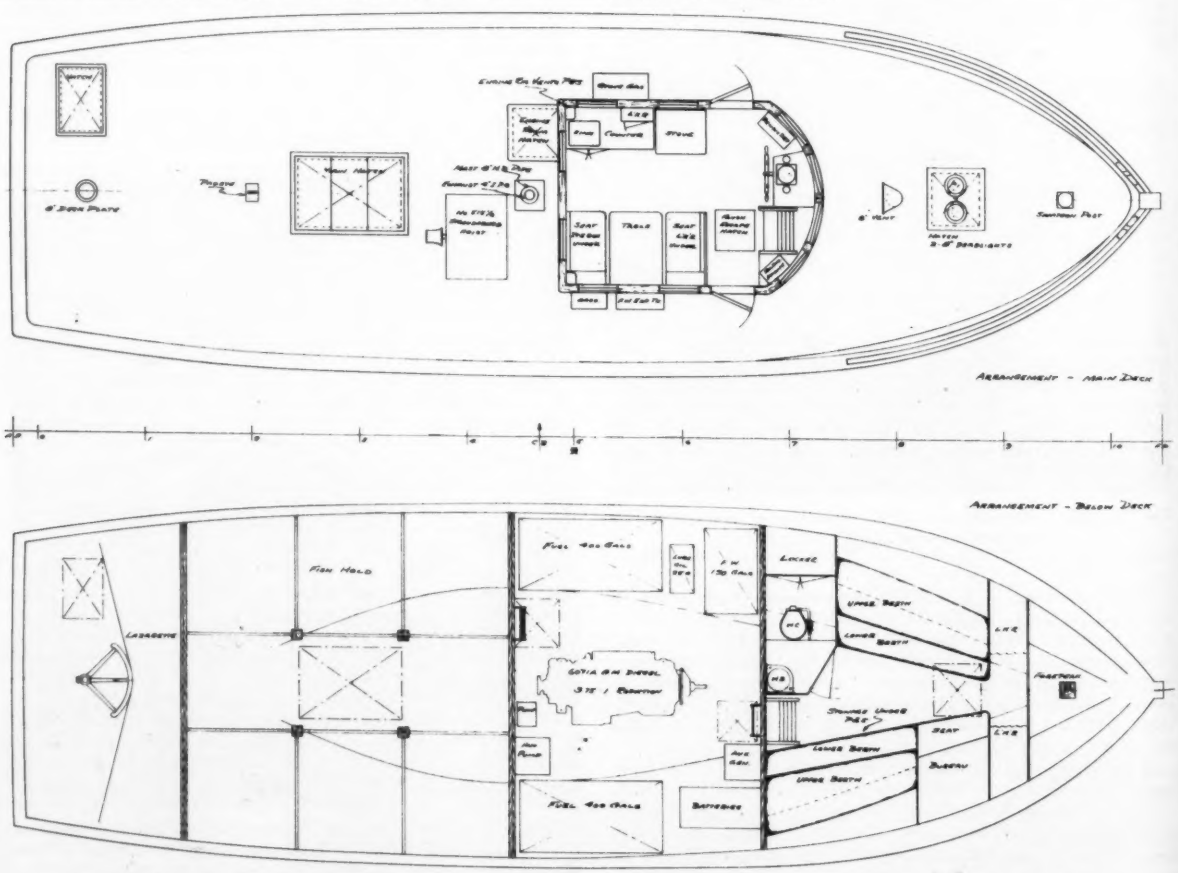


Outboard profile of 48′9½″ shrimper designed by Marine Architect Kenneth L. Smith of Fairfield, Conn.

The shrimper will be equipped with 32-volt Gould-National batteries, and has a 2 kw. Onan generator with automatic voltage regulator. She carries 800 gallons of fuel in two 400-gallon tanks in the engine room and 175 gallons of fresh water. Her winch is a Model 515 Stroudsburg, and pumps are by Jabsco.

Styrofoam will be used for insulation throughout, with the hold to have 2″ Styrofoam with vapor barrier between insulation and hull. Engine room bulkheads will have 2½″ Styrofoam insulation, and the same will be used overhead in the hold. There will be 1½″ Styrofoam overhead in the deckhouse and also in the fo'c's'le.

The shrimper will have a well appointed galley, equipped with a No. 223 Suburban Gas Range. The fo'c's'le has built-in bunks for four.



Main deck and below deck arrangement plans of shrimper designed for Capt. Larry Colby, who will use her off Florida.

Markets for Lake Erie Rough Fish Expanding

More fish being bought by Midwest fur farms and pet food industry, with further usage dependent on additional facilities for storage*

Initial progress in developing markets for Lake Erie rough fish has been extremely encouraging. Indications are that almost all sheepshead produced in the Lake Erie area will find ready markets in the fur farm industry, once adequate handling facilities are established along Lake Erie's shore. In addition, markets for other species of rough fish, such as carp, goldfish, burbot, and gizzard shad should be forthcoming. Fuller utilization undoubtedly will result if present tests being conducted by pet food canners indicate that Lake Erie rough fish can be used as cat and dog food.

To further facilitate the development of markets for Lake Erie rough fish, the following program of research is recommended by the Fish & Wildlife Service.

1. A thorough study of availability of each species of rough fish by area throughout the fishing season.
2. Species composition of rough fish catches by area throughout the fishing season should be obtained through interviews with fishermen and direct observations and sampling.
3. Proximate composition and thiaminase assays of all rough fish species should be determined, by area, at prescribed intervals throughout the fishing season.
4. Fur animal nutritional studies, using lake species, should be conducted, if possible. These would have to extend through several generations to be effective.
5. Statistical information should be collected which would indicate the amount of rough fish marketed, and its value.
6. Establishment of a sound biological program to measure the effect of rough fish removal on other species.
7. And last, but not least, a continuing survey of all potential markets for rough fish.

Good Market for Fish in Mink Industry

Since the mink industry seemed the greatest potential market for rough fish in the Great Lakes area, initial market development activities of the Fish & Wildlife Service have been directed, for the most part, to this market. The work was undertaken at the request of the Lake Erie Fish Management Committee.

Lake Erie was chosen as the site of the pilot market development program in the Midwest because of the tremendous numbers of rough fish in this Lake, particularly in the Western basin. The Fish & Wildlife Service's role has been largely that of endeavoring to develop and cement contacts between producing and buying groups. Headquarters for the project are located near Cleveland, Ohio.

There are some 5,000 mink ranches in the United States, and the National Board of Fur Farm Organizations estimates that these ranchers can use some 250 million pounds of fish a year. Over two-thirds of these fur farms are within easy reach of Lake Erie fishermen.

Many mink ranchers have not resorted to Lake Erie as a source of supply for rough fish because of lack of information as to the potential of this Lake and the limited availability of facilities, such as freezers, in the area. Initial survey work by the Fish & Wildlife Service has shown that tremendous supplies of rough fish are available in Lake Erie, particularly in the Sandusky Bay area, where haul-seine catches average 75 percent rough fish and, at certain times of the year, go as high as 90 percent.

Individual mink ranchers have conducted fish-feeding experiments, and many lake species have been tried. Extensive use of sheepshead on mink ranches in the Midwest resulted from such experiments. Some of the mink ranchers fed sheepshead, exclusively, with promising results. Some ranchers are now planning to try burbot and gizzard shad, along with cooked smelt and carp.

38' x 11'6" fishing boat "Randy" owned by Herbert Bickley, Jr. and Robert Kleba of Kelleys Island, Ohio. She is powered with a 160 hp. Chris-Craft engine, and was built in 1949 for Herbert Bickley, Sr.

Lack of Freezer Facilities Is Problem

One of the leading mink ranchers in the world became interested in fish from the Lake Erie area shortly after the Fish & Wildlife Service program was initiated. This rancher surveyed the area completely in cooperation with the Service's market development staff, the Ohio Division of Wildlife, and commercial fishermen. Supply proved no problem, but it was obvious that rough fish removal would be drastically limited by lack of adequate freezing and cold-storage space in the area. Unless some on-the-spot facilities were available, trucking costs to distant freezers would make an operation in this area economically difficult.

The groups explored the possibility of establishing large freezers at Sandusky, in the heart of the rough fish area. This seemed promising but costly. Through affiliates on the Pacific Coast, they learned of a brine-tank holding method which had proved successful in holding fish in the chilled state for more than a month. A 10,000-pound-capacity tank was assembled on a mink ranch and experiments conducted. The tanks are lined with refrigeration coils which are designed to drop the temperature of the brine solution (3 parts/million) to 28° F. One of the recently-developed antibiotic type products was added to the chilled brine solution to determine the suitability of this procedure for the preservation of fish as a source of mink food. If the tests prove entirely satisfactory, it is anticipated that the company involved will apply this technique on a larger scale in Lake Erie to insure continuing sources of a fish food product.

Others have looked into the problem of lack of freezer space. A Chicago concern, long active in the vitamin field, recently developed a process which is similar to the meat drum-pack process. In it the rough fish are ground and cooked in vats. After thorough cooking, and the inclusion of a special preservative, the fish are packed in metal containers with a capacity of 100 pounds each. This product will keep for extended periods in nonrefrigerated

(Continued on bottom of next page)

* Excerpted from a progress report by Ernie D. Premetz, Fishery Marketing Specialist of the Fish & Wildlife Service, Lorain, Ohio.

New 55-Foot "Pathfinder" Will Permit Expansion of Virginia Marine Research

THE pioneering nature of the research program at the Virginia Fisheries Laboratory, Gloucester Point, is suggested by the name of their new research vessel. She is the *Pathfinder*, a 55-ft. x 16½-ft. x 5-ft. craft launched recently by Curtis-Dunn Marine Industries, West Norfolk, Va. The new research vessel was built to designs of George E. Meese, Naval Architects and Marine Engineers of Annapolis, Md.

She is the first boat specifically designed for marine research in the Chesapeake Bay estuarine and coastal waters, and will perpetuate the memory of Commodore Matthew Fontaine Maury, a Spottsylvania-born Virginian who became world-renowned for his publication of wind and current charts. These have been of inestimable value to ocean navigation for a hundred years, and were assembled during the years Commodore Maury served in the United States Navy. In 1861, he resigned his commission to represent the Confederacy in Great Britain and years later, still serving his native State and the navigator, he became instructor in meteorology at Virginia Military Institute.

Will Replace "Virginia Lee"

The *Pathfinder* will replace the old *Virginia Lee*, which is considered unseaworthy for continued service. To carry on effective studies of Virginia's fisheries, it is necessary to ride out the sudden storms that lash the waters of Chesapeake Bay, and to investigate conditions over the continental shelf outside the Capes.

"The new boat will make it possible for us to conduct surveys that were impossible with our present vessel", said Dr. J. L. McHugh, Director of the Virginia Fisheries Laboratory. "We hope to improve the efficiency of our present surveys of the distribution and abundance of migratory fishes, crabs, and other marine animals. We hope also to learn how conditions in the ocean affect the supply of seafoods within the Bay. We will be equipped for trawling and dredging in fairly deep water, and will have special equipment for studying the microscopic animals and plants that are so important as food for the larger marine animals. Ample deck space will be available to handle all types of fishing and scientific gear."

The new boat is similar in her general lines to a Southern shrimp trawler. The chief features of difference include an engine room situated aft, in the space usually used as a fish hold, living quarters and galley below decks forward of the engine room, and a roomy laboratory on deck immediately aft of the wheelhouse.

The "Pathfinder", new 55' marine research boat of the Virginia Fisheries Laboratory, Gloucester Point, Va.

A quick-freeze box will preserve specimens in the fresh state until they can be carefully examined by scientists. Live tanks, properly aerated, will hold fish and other marine forms for delivery to the Gloucester Point Laboratory. A chemical laboratory for analysis of sea-water is an integral part of the new vessel.

Engine Room Equipment

The *Pathfinder* is powered with a Caterpillar D326 Diesel developing 120 hp. at 1600 rpm., and drives a 38" Columbian propeller through Twin Disc Hydro-Troll Model MGHV-220-17 with 2.96:1 reduction. The auxiliary generator is an Onan Diesel Model 3MDSP-232R with remote starting. The main engine has a Model NSC2 Maxim silencer and the auxiliary generator has an MSC2 Maxim silencer. Electrical equipment includes a La-Marche Constavolt 15-ampere shore converter and 32-volt Surrette batteries.

There is a Hathaway No. 8234 winch, controlled by Vickers hydraulic equipment, as well as a #4 Albina electric windlass. Steering equipment includes a Manhattan Marine & Electric Co. Model H-862 steering gear on the pilothouse and a Columbian Model 46-A bevel gear for the steering wheel on the flying bridge. Deck fittings and portlights are Wilcox-Crittenden, and navigation equipment consists of Bendix radiotelephone, depth recorder and radio direction finder.

The vessel is equipped with a Jabsco Model 2500-01 bilge pump and a Jabsco Model 823 salt water pump. An Anchor Post hot water heating system is provided for Winter work, and Groco pressure water system gives both cold and hot water service.

(*Continued from previous page*)

storage without spoilage. The cans may be opened and closed repeatedly without any effect on the product. A cannery in the Sandusky area has been found satisfactory for the operation, and a test run using carp already has been conducted successfully.

A number of mink feed brokers also plan to truck sheepshead to freezers in Midwestern States. These concerns already have made contacts with Ohio fish producers, and some contracts have been signed. However, lack of adequate freezer space on Ohio mink ranches precludes extensive storage of Lake Erie fish during the periods when these fish are most plentiful. If adequate holding facilities, such as brine tanks, are made available in the Sandusky area, use of lake fish by Ohio ranchers is expected to increase tremendously.

Fish for Pet Food

Considerable effort toward developing markets for Lake Erie rough fish has been directed to the pet food industry. Although some of the small cat food canneries do use quantities of lake fish, primarily smelt, in their operations, larger concerns are using practically no freshwater fish in their product.

A number of the large pet food concerns have been contacted, and most expressed interest in Lake Erie rough fish and indicated they would investigate the feasibility of using these fish in their operations. Species such as carp, burbot and gizzard shad will be tested.

Use of fish in the pet food industry has increased tremendously during the past decade. In 1947, this industry packed about 43.7 million pounds of fish-based pet foods, valued at almost $4 million to the packer. In 1955 the pack of fish-based pet food totaled 256 million pounds, valued at $27.5 million. Part of this increase has been due to an expansion of the pet food industry, whereas, part has been due to the shortage of horse meat, with fish now being used as an effective substitute, especially in food for cats. Indications are that this industry will continue to expand during the next decade.

Maine Sardine Fishermen Get First Catches of Season

Hugo Lehtinen, Sr. of Tenant's Harbor trapped the first sardine herring of the season, when he took out about 560 bushels on May 14. He reported that it was a little earlier than usual for fishing to start. The herring ran good size—five or six to the can, and Lehtinen predicted the season would be fairly steady this year.

Holmes Packing Corp., Rockland, received its first herring on May 20, when 800 bushels were landed. The fish were taken at Matinicus by Clyde Bickford of Vinalhaven. Port Clyde Packing Co. at Port Clyde also received their first fish of the season from the same source, and opened their plant for operation.

The earliest "sizeable" catch of herring—3,000 bushels—was taken from Polly's Cove on May 27. The cove is between North Haven and Vinalhaven in the so-called thoroughfare, and the fish were caught in the weir of Alfred Hall and his nephew, David Hall.

Last Summer was one of the best herring seasons in years, and fishermen say that from the early appearance of fish this year, a bumper harvest of the sardine herring may be expected. Nearly 700 people will be employed during the sardine season. The early start of the season is welcome, as the pack of last year is pretty well sold out.

House Passes New Lobster Size Law

Maine's House of Representatives last month passed the new 3-3/16 inch minimum gauge law which would cause Maine lobstermen to throw back an estimated two million pounds of lobsters a year. However, a new maximum gauge of 5 3/16 inches will compensate somewhat for the new minimum legal length. The maximum measure was added as an amendment to the bill, which will become law next January 1, provided it is passed by the Senate.

The provision for the maximum lobster size of 5 3/16 inches will expire in two years, reverting to the present 5-inch standard. The amendment was co-sponsored by the dealers and fishermen in line with efforts to have Massachusetts adopt a double gauge law similar to Maine's.

40-Fathom Fleet Doing Well

The 40-Fathom fleet operating out of Rockland hit good fishing on the Grand Banks early last month, and the busy season at the fillet plant began. The *Surf*, Capt. Douglas Schwartz, arrived in port on the 6th of May with between 275,000 and 300,000 lbs.

The *Wave* and the *Storm*, with catches estimated to be about as large, were on their way to port at that time, and the *Tide* was expected to make port before the end of that week, with a heavy catch.

Sardine Plant Leased by Underwood

The William G. Underwood Co., of Watertown, Mass., has leased the Royal River Packing Co. at Yarmouth and eventually will purchase the property, operating it under the lease until the deal is closed.

Ralph R. Stevens, who has been operating the plant for several years, will continue as plant manager. The plant employs an average of 165 workers during the sardine packing season.

The Underwood Co. owns and operates a packing plant at McKinley and another at West Jonesport.

Price of Redfish Stabilized

Four Portland wholesale fish firms made agreements with owners of 12 to 15 fishing draggers to guarantee them 3.75 cents per pound for redfish this Summer. Agreements were made after boat owners said they wouldn't be able to continue to operate if redfish prices dropped to 3½ cents as they did last Summer.

The four firms agreeing to the price were: Mid-Central Fish Co., Maine Fisheries, Portland Fish Co. and Fulham Bros., Inc.

Two of the three draggers that are scalloping out of Rockland, Maine. The "Pocahontas", left, owned by Harvey Gamage of South Bristol and skippered by Capt. Maynard Lammi; and the "Rhode Island" owned by Capt. William Howell of Southwest Harbor. The "Pocahontas" is powered by a 400 hp. Caterpillar Diesel while the "Rhode Island" has a 200 hp. Henry Diesel.

Clam Digging Restrictions Repealed

The House on May 10 accepted from a majority of the Sea & Shore Fisheries Committee a bill repealing all the special laws restricting clam digging in certain towns to residents of those towns. It adopted an amendment permitting the towns by their own vote to restrict digging in whatever manner they choose, and to conduct clam management programs.

Recapture Tagged Redfish

The Canadian research vessel *Harengus*, working in cooperation with the Fish & Wildlife Service, returned to New Brunswick on May 18 from a cruise to recapture redfish that had been tagged at Eastport, Me. during 1956.

Twelve tagged redfish were recaptured from a total of approximately 60 fish caught on hook and line at the original tagging site in Eastport harbor. The average growth of the tagged fish was 3 millimeters over a period of nine months.

Large cod, haddock, pollock and dabs were found in most tows. A fair bag of sardine-sized herring was taken at one station, and samples of very small whiting and cod were collected at several stations.

Lobstermen To Hold Annual Convention

The third annual convention of the Maine Lobstermen's Assoc. was to be held June 6 in Rockland. Speakers were to include Massachusetts Director of Marine Fisheries Frederick Wilbour and Maine Sea & Shore Fisheries Commissioner Ronald Green.

Fishery Landings Drop

Landings of commercially-caught fish and shellfish at Maine ports during February amounted to 4.8 million pounds valued at $552,000. This was a decrease of 3 percent in volume and 9 percent in value compared with landings during February 1956.

Enjoy Maine Lobster Dinner

The annual lobster dinner of the Maine State Society of Washington was held in Washington early last month, and those attending had proof positive that there is no lobster like a Maine lobster.

Attending the dinner were members of a House Commerce subcommittee studying the lobster-labeling bill, which is backed by all Maine members of Congress. The bill would declare by law that the Northeastern Coast crustacean, known as "Homarus Americanus", is the only "true" lobster and none other should be so classified.

Should Maryland Open More Waters To Hydraulic Clam Dredging?

Investigation by Maryland Dept. of Research and Education reveals clam market development would be required to move heavier landings; also points up need for enforceable line between soft clam bottoms and productive oyster beds.

MARYLAND has probably always had soft clams, but in the past these have been almost unharvestable because of small tides. In recent years the coincidence of New England's clam shortage and the invention and adaptation of the hydraulic dredge—a highly effective machine—have resulted in utilization of the Maryland clams. The new industry has expanded rapidly, and present data suggest that it may have an economic potential equal to the Maryland crab or fish industries.

There has been considerable discussion recently regarding the question of opening additional Maryland counties to soft clam dredging. Grave concern has been shown by those who use other resources from the water and from the estuarine bottoms. These people ask if the hydraulic dredges, slowly cruising through some areas, are excessively destructive of oysters, habitat for crabs and fish, and other established resources or uses.

An investigation of this matter has been carried out for the General Assembly by the Maryland Department of Research and Education, Chesapeake Biological Laboratory, Solomons. In reporting on the research, shellfish biologist J. H. Manning points out that if an enforceable line can be drawn between the Maryland soft shell clam fishery and the productive oyster bottoms, use of the hydraulic clam dredge does not constitute a biological hazard.

Observations indicate that, in the Eastern Bay-Wye River area:

(1) There have been flagrant violations of the law which prohibits the use of the hydraulic clam dredge on chartered oyster bars.

(2) There have been violations of the same law where the circumstances were to some degree extenuating, in that the boundaries of the oyster bars were not marked.

(3) There are areas now chartered as natural oyster bars where there are few if any oysters; and conversely, there are areas not chartered as natural oyster bars which produce commercial quantities of oysters.

(4) Unless the State can delineate more clearly the areas open to clam dredging, enforcement of the law will continue to be difficult.

(5) If areas for oystering and clamming are allocated on the basis of surveys made 40 to 50 years ago, economic loss will result to both industries.

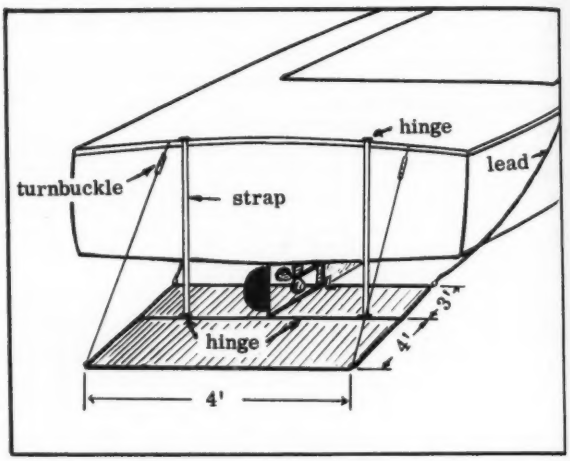


Figure 1—Propeller guard which Fisheries Research Board of Canada has found to be effective in minimizing displacement of sediments during hydraulic clam dredging.

No Oyster Mortality at Distances Over 75 Feet

Experimental results and observations by the Maryland Department of Research and Education verify an earlier (1954) prediction that virtually all of the oysters in the path of the hydraulic dredge will die, but that oysters a short distance from the site of dredging will be unaffected. It has been demonstrated that intensive dredging under conditions representative of the extremes observed in all but a very minor fraction of Maryland's clam-producing area can be expected to result in: (1) displacement and deposition of measurable quantities of sediments up to about 75 feet downcurrent from the dredged area; (2) essentially complete mortality of oysters within the dredged area; (3) significant mortality of oysters 25 feet downcurrent from the dredged area; (4) possible mortality of oyster spat up to about 75 feet downcurrent; and (5) no mortality of oysters or spat at distances greater than about 75 feet from the dredged area. Observations of areas subjected to intensive commercial dredging support the experimental results.

Pertinent statistical evidence is available concerning oyster setting in the Eastern Bay-Miles River area, where clam dredging began and where it has been most intensively practiced. Records maintained by the Department of Research and Education indicate that there has been no significant change in oyster setting in that area attributable to hydraulic clam dredging.

Statistical records of the fishing and crabbing industries include catch records by geographical units of tidewater, of which the Eastern Bay-Miles River area is one. The evidence indicates that the area's share of the total commercial catch of fish and crabs has not declined since the advent of the soft shell clam fishery.

Figure 3—Hydraulic clam dredge in operation off St. Michaels, Md., with Evinrude outboard powered runabout in foreground.

Resources Not Fully Utilized

It is likely that Maryland could produce at least half a million bushels of clams annually. If there were a ready market for this production and an average price of $4 a bushel to the dredger were maintained, the dockside value of the catch would be $2,000,000 or more, and the gross value might range from $3,000,000 upward, depending upon how much of the catch was processed in Maryland. A ready market for production of this magnitude does not now exist. If the Maryland soft clam industry is expanded geographically, the process obviously should be carefully considered in the light of prospective demand.

Estimated dockside value of the Maryland soft shell clam catch in the Fiscal Year 1956, at the price of $4 a bushel to the dredger (including catch in Dorchester County), was $580,000. Predicted dockside value of the catch in the Fiscal Year 1957 (including catch in Dorchester County July 1-November 1), is $720,000.

Production in the Maryland soft shell clam fishery thus far has been controlled by out-of-State demand. Demand in Maryland is slight, but increasing. Nearly all the catch is shipped to the Middle Atlantic or New England States.

Maryland now produces about half as many soft shell clams annually as Maine, but more than all the other clam-producing States of the Atlantic Seaboard together. The soft shell clam grows very rapidly in Maryland—about three times as fast as in Maine—and the life span of the species is relatively short. The depletion of spawning stocks appears unlikely in the foreseeable future. Clams are widely distributed, and population density is highly variable. An economically harvestable standing crop estimated at more than 700,000 bushels is concentrated in a very minor fraction of the total area of tidewater bottoms.

In the past four years demand for Maryland clams has increased steadily, fluctuating between high levels in the Summer months and relatively low levels during Winter and Spring months. Opportunities for market development, both domestic and foreign, are considered to be excellent, but only if supplies of a product of good quality are assured.

There is as yet no indication that the soft shell clam resource is being over-exploited. Some of the catch has been taken from bottom where clam dredging is not legal, but the industry probably can produce about as many clams as it has been producing without trespass.

Soft Clamming Regulations

Regulatory measures for the soft shell clam fishery, enacted by the Maryland General Assembly in 1955, included limitations on the dimensions of the dredge and the time for taking and landing clams. A minimum size limit of 2 inches, shell length, was adopted. Use of the dredge was prohibited on the charted natural oyster bars, and a schedule of penalties for violation of this and other provisions of the code was established. A tax of 10 cents per bushel of clams produced in Maryland was imposed on the industry, the revenue to be used for purposes of research by the Department of Research and Education. Concurrent legislation prohibited use of the hydraulic clam dredge in Anne Arundel, St Mary's, Kent, Wicomico and Somerset Counties as of June 1, 1955, and in Dorchester County as of November 1, 1956.

The clam dredge fishery is now confined by law to the waters of four counties—Calvert, Talbot, Queen Anne's and Charles. No dredging has been done in Charles County.

The total Maryland soft clam catch for the Fiscal Year 1956 was about 140,000 bushels. Ninety-three clam dredges were licensed for operation as of December 1956.

It is estimated that the catch of soft shell clams in the Fiscal Year 1956 in Calvert, Talbot and Queen Anne's Counties came from bottom totaling in area about 5 percent of all the bottom open to clam dredging and about 1 percent of all the bottom beneath tidewater in those counties. Present knowledge indicates that the industry is now sustained mainly by an annual crop of clams from bottom which has been dredged one or more times since 1952, when commercial dredging began, and that future geographical expansions within the counties where dredging is permitted will be slight.

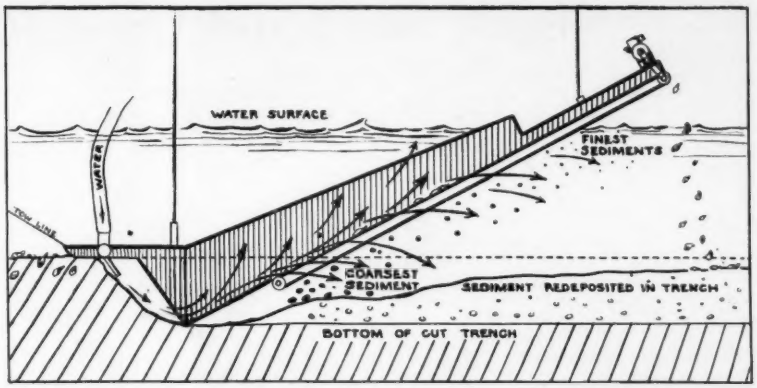


Figure 2—Schematic drawing of the hydraulic clam dredge in digging position in the bottom with one side cut away.

Propeller Guard Reduces Clam Mortality

Fairly extensive mortalities of both marketable and smaller clams within areas dredged intermittently over a period of a week or more, have been observed in the Summer. Summer mortalities of as much as 20 percent of large clams and 15 percent of small clams also have been observed in areas where no dredging had been done. It is reasonable to believe, however, that mortalities of clams are caused in the immediate vicinity of dredging operations by deposition of coarse sediments on the bottom alongside and between the trenches cut by the dredge, especially in shallow water, where the wash of the boat propeller is thought to be the major factor in displacement of these sediments. The use of a propeller guard probably would aid materially in reducing mortalities.

The mortality of young clams appears to be highly variable in dredged areas. Where it is low, the area may be dredged profitably again within a few months to a year. Where it is high, about 16 to 34 months may be required for repopulation and growth of the clams to marketable size—longer if setting fails in the first spawning season after the area has been dredged.

Even though the effects of hydraulic clam dredging on sedimentation are relatively limited, if there is any practicable way of minimizing displacement of sediments it deserves adoption by the industry. The only controllable factor of consequence appears to be the volume of sediment placed in suspension. This can and should be minimized. The boat propeller is a major factor in stirring up the bottom sediments. The propeller wash, directed obliquely toward the bottom and unconfined in its effects, not only scours away the upper strata of sediments, but in shallow water can and often does cause deep trenching.

Investigators of the Fisheries Research Board of Canada, who have tested experimental models of hydraulic clam dredge over a period of two years, have developed a propeller guard which deflects the propeller wash and greatly minimizes its effect. Figure 1 is a drawing of a propeller guard which the Canadians have found to be most effective. They state that the guard shown completely removes the trenching effect of the propeller and that they can ground the boat and run the motor at full throttle without damage to sandy flats. The device is said to reduce the cruising speed of the boat by about one-third. It can be swung over the stern and carried aboard if necessary.

(Continued on page 33)

The "Miss Kim", 55-foot Hatteras Trawler constructed by the Morehead City (N. C.) Shipbuilding Corp., and one of her owners, Kenneth Meadows of Swansboro, N. C. He is a partner in the Meadows Seafood Co. of Beaufort, along with his brother Clifton. The vessel is powered with a General Motors 6-71 Diesel.

North Carolina Deep Waters To Be Explored for Shrimp

Tentative plans have been made for a long-range exploration of North Carolina's offshore fishing grounds. The Fish & Wildlife Service research vessel *Combat* is due to arrive this month and will be engaged in explorations between the Cape Hatteras Lightship and Cape Lookout Light, a section approximately 65 miles long. An area 150 to 250 fathoms deep between Cape Fear and Cape Hatteras also will be explored.

The exploration will be concerned with the finding of shrimp beds at the greater depths, and will include searching the offshore areas beyond a depth of 30 fathoms. Future exploration by the research vessel will be planned for the finding of a "Winter" and other species of shrimp, establishment of new grounds for finfish trawling and the testing of ocean bottom where evidence of scallops has been found by fishermen.

Plans for this long-range program were made at a meeting last month in New Bern of members of the N. C. Fisheries Assoc. and officials of the Fish & Wildlife Service.

Freak Flounder Caught

A freak flounder was taken last month by the *Edith M.*, one of Capt. Ottis Purifoy's boats which operates out of Morehead City. The fish is a "reverse" flounder. Its eyes are on the right rather than on the left, and it is also colored on both sides. Normally a flounder is white on one side and his eyes are on the other or the "pigmented" side.

There have been many flounders caught which have been colored on both sides and many "reverse" or "right-handed" flounders, but this fish is only the second of its type ever to be recorded.

Shrimp Season Prospects Good

The season for taking shrimp legally from waters under State control opened at midnight May 1. The decision to open the shrimp season was taken on recommendation of Dr. A. F. Chestnut, director, Institute of Fisheries Research; Cecil Morris of Atlantic, chairman of the Commercial Fisheries Committee; and C. Gehrmann Holland, State Fisheries Commissioner.

Day and night shrimping will be permitted, but shrimping is prohibited on Sundays in the State's inland waters. The shrimp season in 1956 began May 20.

Early catches indicated that this year's season would be fair, and perhaps very good. The biggest hauls were being made in Core Sound at night, each boat averaging 200 pounds or more. From Long Bay came the report late last month that in a single day 500 boxes were taken. Most of them were landed in the Atlantic area.

"Miss Kim" Completed for New Shrimping Firm

A new enterprise in the fishing port of Beaufort, North Carolina, is starting out with a new 55' Hatteras Trawler as a mainstay of its operations. The firm is the Meadows Seafood Co., and the trawler is the *Miss Kim*, built by the Morehead City (N. C.) Shipbuilding Corp.

Partners in the Meadows Seafood Co. are Kenneth Meadows, a veteran of 25 years of fishing in Florida and North Carolina, and his brother, Clifton. Kenneth Meadows has fished out of Florida the past seven years after working out of Swansboro, North Carolina, for 18 years. The Meadows brothers also have brought another trawler to Beaufort, a 65-footer, to work with the *Miss Kim*.

The *Miss Kim* is powered by a General Motors 6-71 Diesel with a Twin Disc power take-off and a Twin Disc 4½:1 reduction gear. American Brass Co. furnished the 3" Tobin bronze shaft, and the engine controls are by Marmac.

The auxiliary generator is a 2000-watt Lister-Blackstone Diesel model. The boat is equipped with a 1¼" Jabsco pump and a 1½" Marine Products pump. There are four 8-volt Surrette batteries.

The *Miss Kim* has two 800-gallon fuel tanks and a 300-gallon fresh-water tank. On deck is a Stroudsburg 515-½T winch with two 900' spools of 7/16" Wickwire wire rope for towing and a 300' spool of ⅜" Wickwire wire rope for handling the try net. Other equipment includes a 42" mahogany pilot wheel from Marty's Wood Products, a 5" Ritchie compass, a Real Host stove, a One-Mile-Ray searchlight, and a 65-pound Danforth anchor.

Summer Menhaden Operations Started

Beaufort Fisheries menhaden boats started Summer operations last month, and according to general manager W. H. Potter, the catches thus far have been "nothing to holler about". The Summer fish are small and feed northward along the coast as well as close inshore from their ocean grounds.

Oyster Convention to be in New York

The 49th joint annual convention of the Oyster Institute of North America and the National Shellfisheries Association will be held at the Belmont Plaza Hotel in New York City July 22-25. Several important matters will be discussed, including sanitation in relation to foreign imports, the solids in oysters and bleeding of Southern oysters, and final briefing on the Public Health Service Shellfish Manual, which will go into effect next Fall.

Washington Fishermen Expect Profitable Season

The Fish & Wildlife Service has announced that 1956 was a good year for fish prices on the Seattle market. Charles M. Reardon reported that it is doubtful that any year prior to 1956 was as profitable a year for the individual salmon fisherman.

He also reported that 1957 should prove highly successful for the Pacific Northwest fishing industries because: (1) it is a pink salmon cycle year; (2) halibut fishing is expected to be good; (3) the troll fishery should be as good as in 1956 and (4) the sable otter-trawl fishery has fluctuated very little in the past ten years.

Arrives with First Halibut

First halibut boat into Seattle this year was the *Nightingale* which received 35¼ cents a pound for a 25,000 lb. load. Second boat in was the *Inez M.*, with a load of 41,000 lbs.

To Demonstrate Western Method of Seining

The seiner *Star of the Sea* left Seattle last month to show East Coast fishermen how to catch menhaden. The present East Coast method requires two boats and 24 men to a net, but the Western boats have been handling the same size net with six men in one boat.

On Fishery Exploratory Cruise to Alaska

The Seattle trawler *Tordenskjold* is on a four to five month exploration voyage in Alaskan waters for the Fish & Wildlife Service. The ship, skippered by Carl J. Serwold of Seattle, will explore trawling grounds of southeastern Alaska, from Dixon Entrance to Baranof Island, and will fish with bottom trawls and king crab pots south of the Alaska Peninsula and the Eastern Aleutian Islands.

Crab Price Dispute

Crab prices were a bone of contention in Westport for a short time at the beginning of the season, with a cut from eight cents a pound to six cents bringing on the dispute. The market is still far from stable, with many buyers not buying even at the agreed price.

Cannery Uses Shrimp Peeling Machine

The importation of a shrimp peeling machine to Westport has put the shrimp fishing business on a paying basis in that section. Hand-cleaning was too costly, so Ed Kaakinen, head of the Westport Cannery, imported the peeling machine from the South and commercial processing has been going on ever since.

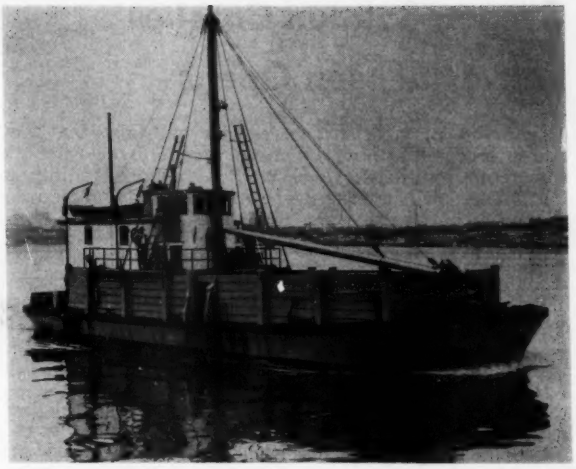
The small cocktail size shrimp were first discovered by the Fish & Wildlife Service vessel *John N. Cobb* in November, 1955. Catches in the area have been exceptional, with four boats working and averaging 10,000 pounds a day, with the selling price stable at 7¢ a pound.

Allen Named Maritime Man of Year

Edward W. Allen, International fisheries authority, has been named as Puget Sound's Maritime Man of the Year for 1957. The award was given mainly in recognition of Allen's years of service to the nation on various International fisheries commissions.

Seek to Cut Sockeye Season

The International Pacific Salmon Fisheries Commission has recommended a drastic curtailment in the sockeye fishing season this year. The Commission urges only a two-day-a-week fishing season in British Columbia waters in August as a conservation measure because of the high efficiency of gear and concentration of boats.



Cannery tender "Viekoda", owned by San Juan Fishing & Packing Co., Seattle, has been repowered with Waukesha Diesel engines for twin-screw propulsion.

Cannery Tender "Viekoda" Repowered

The 72' twin-screw cannery tender *Viekoda*, owned and operated by San Juan Fishing and Packing Co. of Seattle, has been repowered with Waukesha Model 148-DKBSM Vigilant Diesel engines, sold through Piston Service, Inc., Seattle.

Commonly known as a power scow, the vessel is used to remove fish from traps by brailing. She has a beam of 24', draft of 5.8' and tonnage of 93 net and 105 gross.

The newly-installed Waukesha 6-cylinder engines are rated 165 hp. at 1800 rpm. maximum and 135 hp. at 1600 rpm. continuous. They have Twin Disc 3:1 reduction gears, Twin Disc power take-off and keel cooling, and swing 38 x 23 Coolidge propellers.

Has Fisheries Position in Vietnam

Robert J. Schoettler, former director of the State Fisheries Department, has been appointed fisheries advisor to the U. S. Operations Mission at Saigon, Vietnam. He left for his new post last month.

University to Conduct Research Projects

The Fish & Wildlife Service has signed six contracts with the University of Washington for research projects to be conducted this Summer in Alaskan waters. The work will cover such fields as salmon migration, sea lion and hair seal habits, king crab growth and the effects of logging on fish streams.

Boshell Joins San Juan Packing

Russell M. Boshell has joined San Juan Fishing & Packing Co. as Food Technologist and Technical Marketing Assistant. Mr. Boshell comes from Oregon State College, where for the past two years he has been conducting a marketing study for the U. S. Fish & Wildlife Service. This has involved a detailed investigation of the marketing of fish and shellfish products at wholesale and retail, and shows consumer preference and buying habits for these products.

Seattle Landings for May

Thirty-five otter trawl trips were landed at Seattle during May, and a total of 1,343,500 lbs. of fish was unloaded. This was approximately the same as in the previous month, but was nearly a half million lbs. less than in May, 1956. Pacific Ocean perch landings were the largest of any species, with 318,900 lbs., for a gain of almost 100,000 lbs. over May 1956.

In the halibut fleet fishery, 5,407,500 lbs. were landed in May. The catch included small quantities of rockfish, sablefish and cod, and was eight times as heavy as in May, 1956.

Oregon Salmon Catches Fair as Season Opens

Columbia River fishermen reported on May 2 that they had intercepted a fair salmon run on the first day of the commercial gill-netting season. First night's landings in the Corbett drift averaged about 500 pounds, but strong winds hampered fishermen that night, running the boats onto the nets.

Astoria canneries did not post salmon prices, but were ready to compete with the fresh fish market. Upriver, independent buyers were offering as high as 35 cents a pound.

Fisheries Director Resigns

M. C. James resigned as State Fisheries Director on May 17 to return to the position of research coordinator of the Pacific Marine Fisheries Commission.

John L. Hodges, who has been Assistant Fisheries Director since last September, will assume duties as State Fish Director. Hodges has been with the Commission since 1947, and has been closely associated in the past three years with fishery problems involved in various power projects.

New Salmon Hatchery to be Built

A contract was awarded recently to a Portland, Oregon firm for the construction of Cascade Salmon Hatchery on Eagle Creek near the town of Cascade Locks. The hatchery is being built as part of the Columbia River Fishery Development program authorized by Congress to restore depleted Columbia River salmon runs.

The new hatchery will be devoted to the artificial propagation of chinook, silver and chum salmon and will have an estimated annual production of 11,000,000 young migrants.

May Consolidate Fish and Game Commissions

A resolution passed by the Oregon Senate and sent to the House would create a seven-member special committee to make a two-year interim study of the possible consolidation of the State Fish Commission and the State Game Commission. The study group, which also would look into all aspects of fish and game laws, would be composed of one State Senator, two Representatives and four others named by the Governor.

Catching Fish for Mink Food

Trawler fishermen operating in waters off Crescent City are scooping up an increasing tonnage of fish which go into the making, in a roundabout way, of mink coats. More than 1,000,000 pounds of fish landed at Crescent City annually are channelled to mink farms.

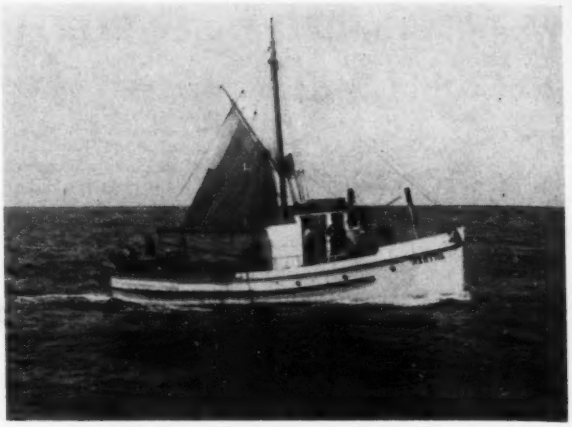
Clam Planting Being Considered

A large-scale transfer of soft-shell clams from Nehalem Bay to tide flats in the Siuslaw River is being considered by the Oregon Fish Commission as a possible means of bolstering the Siuslaw clam production that has been at a low ebb in recent years.

The chief object of the transfer, according to C. Dale Snow, Fish Commission Shellfish Biologist, would be to supplement the spawning population of soft-shell clams in the lower Siuslaw River. Investigation of clam production areas in the Siuslaw has revealed a definite lack of large, potential spawner clams.

Snow said there is some evidence that increased sedimentation—largely silt and sawdust—may be a contributing factor to the Siuslaw clam decline. The Siuslaw tide flats were formerly one of the top producers of soft-shell clams on the Oregon coast.

Last January, a trial plant of Nehalem Bay clams was made in the Siuslaw River. Snow said the test indicated that planted clams will survive in sufficient numbers to warrant a larger-scale plant.



50' crab boat "Martha" owned by Kenneth Knaak of Newport, Oregon. Her equipment includes 150 hp. Cummins Diesel with 2:1 Twin Disc reduction gear; Kaar radio-telephone and Fitler rope. She uses Tidewater fuel and lubricating oil.

California Bill Would Provide Earlier Sardine Season

Two bills now moving through the California Legislature promise substantially to improve the California fishermen's lot if they pass as expected. A bill approved May 16 by the State Senate Fish & Game Committee would move up the start of the South California sardine season to September. The change in dates would give the southern fishermen a season running from September 1 to December 31, as compared with the present season of October 1 to February 1. Another provision of the bill changes the date of the sardine fishing in Northern California from August 1-January 15 to August 1-December 31.

The change in the dates was prompted by two factors—the earlier opening date will give local fishermen a chance at huge schools of Mexican sardines which have been reported as moving past the San Pedro area during the month of September in the past years; and second, the possibly increased catches will help the local sardine industry.

On May 14, the Assembly Finance and Insurance Sub-Committee approved by a 9-1 vote a bill making fishermen earning below their "benefit" wage, eligible for partial unemployment pay. The bill defines a "partially unemployed person" in the fishing industry as a person hired as a commercial fisherman, who during the particular week, is employed by his employer but earns less than the benefit he would be eligible for under partial unemployment terms applicable to other types of workers.

If the fisherman earns less than $33 a week, the maximum benefit he could receive if jobless, he could then apply to the State for the difference between his pay and the $33. At present fishermen are classed in a category similar to small businessmen and commission salesmen who are not eligible to receive the "partial unemployment benefits" even though they are working but do not receive pay equal to the benefits during a particular week.

The California Assembly on May 14 withdrew from a committee a Senate-passed bill prohibiting commercial salmon and shad net fishing upstream from the Carquinez Straits. The bill was hotly opposed by commercial fishermen in the Sacramento River delta area, and just as avidly backed by sports fishermen as a conservation measure.

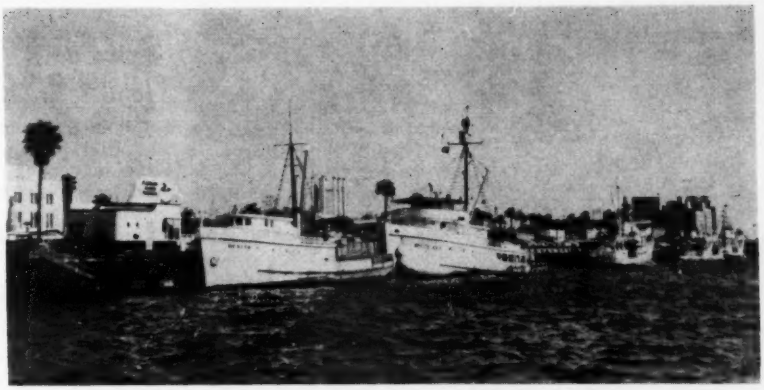
Commercial salmon fishermen have been pushed from several hundred miles of river to 15 miles, and it was thought they shouldn't be restricted further. The ban would apply from Carquinez Bridge to Stake Point, 15 miles upstream.

Make Good Salmon Catches

Salmon fishing in Monterey Bay picked up considerably in mid-May, and by the month's end the boats were coming in with fair catches. Among the boats from Morro Bay fishing out of Monterey were the *Kay Bee*, Capt. Leo Jubelt; *Flying Dutchman*, Capt. Edward Hart; *Maggie O*, *Flying Star* and *West Wind*.

Good fishing grounds for the smaller boats were located in the area between Moss Landing and Santa Cruz, bringing practically the entire Monterey trolling fleet to this side of the bay.

Captains and their boats included the following: Sal Bertolino of the *Maria B. II*; Joe Cardinalli on the *Babe*; Sal Cardinalli on the *Sarah C.*; Vince Napoli of the *Jennie N.*; Joe Spadaro of the *Gasper Boy II*; Paul Spadaro of the *Anna II*; G. Fernandez of the *Two Sisters*; Paul Spataro of the *Anna Marie*; Joe Fernandez of the *Donna F.*; Carmelo De Mari on the *Catherina D.*; Tom DiMaggio on the *Tommy D.*; Sal Flores of the *Francesca*; Julio Laurrai of the *Roz;* Paul Orlando of the *Tuffy;* Tony Castaldo on the *Lucky Star*; Joe Rappa on the *Anna*; Joe Puglaries of the *Ingrid*; Cosmo Criccheio on the *Maria Ida*; Pete Campo on the *St. Anthony;* Frank Flores on the *Judy S.;* Joe Lucido on the *Joy Ann;* Nickola Giaclome on the *Two Sisters;* Rocco DiMaggio on the *Carmelina*; S. Drago on the *San Carlos;* M. Costanza on the *St. Anthony;* Pete Anistratenko on the *Saga;* Sal Aliotti on the *Northland* and Sal Vermi of the *Sally Boy*.



Tuna clippers along the Embarcadero, San Diego, Calif.

To Participate in Albacore Survey

One San Pedro boat owner has successfully bid on a contract to participate in an albacore tuna trolling survey off the coast of California, Oregon and Washington.

Erling Kolnes will be one of seven skippers taking part in the survey starting on July 22 and continuing for 22 days, covering a 350 by 50 mile area from Point Arguello, Calif. to Destruction Island, Wash. Purpose of the survey will be to study the movement of albacore during the Summer months.

Leffler Visits West Coast Ports

Ross L. Leffler, Assistant Secretary of Interior, visited San Pedro and San Diego last month to learn about problems and operations of the local fishing industry. While at San Diego, Leffler was honored at a testimonial dinner by officials of the American Tunaboat Association and San Diego business and civic leaders.

Speaking at the dinner, Leffler said that increased research for West Coast fisheries should be a part of a bigger over-all research program by the Government. More fishing grounds should be developed for albacore, and the possibility of using fish not yet exploited commercially on the Pacific Coast should be explored, he pointed out.

Leffler said the Interior Department is very much concerned about the effect of atomic experiments on ocean currents. Several biologists are now assigned to a study of atomic fall-out and its effect on fish and waters in which U. S. commercial fishermen operate.

The Secretary urged the fishing industry to boost its sales promotion efforts, pointing out that most of the industry's problems would disappear if everyone in the United States ate only one more pound of fish a year.

To Promote Sale of Albacore

William E. Farrar, former Tacoma Safety Commissioner and now general manager of the Federated Fishermen's Assoc. of Long Beach, recently announced formation of a new corporation to promote the sale of albacore tuna caught by American fishermen. Farrar will work with the new corporation in the Pacific Northwest, but will retain his Long Beach post.

He reported that an increase in albacore tuna sales and distribution would revitalize the tuna fleet and result in more orders for fishing boats in local boat yards. The new corporation was expected to be in operation shortly after the start of albacore fishing on June 15.

Purchases Salmon Troller

M. M. Beene has purchased the salmon troller *Jackie-Ann* from N. A. McLaskey. Beene has given up ranching in the Sacramento Valley in favor of commercial fishing.

Pederson Skippering Whaling Vessel

Knut Pederson, who ran the *Northern Isle* out of Moss Landing for several years, has been signed on as skipper of the *Liberty Belle II*, in line with a new policy of British Columbia Packers. The firm is hiring all Norwegian crews for whaling operations off the British Columbia coast.

Tuna Landings at San Diego

Twelve hundred tons of yellowfin and skipjack reached San Diego during one week-end last month on seven tuna clippers. They were the *Normandie, Victory, Columbia, Jeanne Lynn, Frances Marie, Mary Jean* and *Sun Dawn.*

Sailing were the clippers *Charlene, Liberty* and *Westport* and the refrigerated motorship *Puerto del Sol*, the latter bound for Paita, Peru.

Engaged in Salmon Fishing

Earl Harbell on the *North Sea* and Ole Hanson on the *Ronny* stopped in at Moss Landing en route to Bodega Bay. They were among a group of San Diego boats on the way north for salmon.

Curt Olson on the *Ruby II* from San Diego stopped in at Moss Landing on his way to the fishing grounds around Eureka. Accompanying him on the trip north was Earl Gronnel on the *Two Bens.* Fishing with Gronnel this year is John Syfert, former owner of the *Ruby II.* Bob Cruse is fishing the *Nesral* for owner Joe Madeiros out of Avila.

Shrimp Fishery Steadily Growing

After five years of slow but steady growth, the commercial shrimp fishery of California looks as though it is here to stay. Almost daily deliveries are made to processing plants at Crescent City and Bodega Bay. The catch in 1952, the first year commercial permits were issued, totaled 206,000 lbs., and in 1956 it had climbed to 1,150,000 lbs.

The shrimp being taken is a small prawn, but is termed "ocean shrimp" to distinguish it from the smaller "bay shrimp" of San Francisco Bay. The ocean shrimp usually taken for the market are 3-4 inches long, with less than half of this being edible.

Ray Kershaw, Manager, Gloucester Whiting Assoc., Inc., whose members own 52 boats ranging in size from 48 to 110 ft. engaged in dragging for whiting and inshore groundfishing. An affiliated organization, Fisherman's Wharf Inc., of Gloucester, Mass., maintains an unloading and outfitting dock, and carries supplies for the boats.

Massachusetts Research Boat Finds New Scallop Beds

The Fish & Wildlife Service reported on May 21 that exploration by the research trawler *Delaware* indicates that Georges Bank supports sizable commercial concentrations of scallops in two areas not presently being fished.

Scallops were found to be widespread in light commercial quantities in most all areas explored from 30 to 50 fathoms along the northern edge and west of the northeast peak. Most scallops taken were of good commercial size with some catches yielding 9 and 10 meats per pound.

On a later cruise, the *Delaware* was to explore the offshore Atlantic for pelagic subsurface resources. Information on the general distribution of tuna species in the offshore areas during this season of the year will be the cruise's objective, supplementing the distribution and catch information obtained earlier in the year.

BOSTON Gets First Gill Net Mackerel

The first gill net mackerel of the season were landed at Boston Fish Pier on May 16 by the gill-netter *Salvatore*. The trip consisted of 200 pounds, and brought 31 cents a pound. Two additional trips totaling 3,100 pounds were landed the following day, and 20 cents per pound was paid for the large mackerel.

Gloucester got its first mackerel May 27, when 12 gillnetters landed 21,300 lbs.

Labor Dispute Ends

The labor-management dispute which involved over 500 fish plant workers at Boston ended on May 9, with workers returning to their jobs on the 13th. The workers are getting a 15-cent raise this year, 10-cents next year and 5-cents the year after.

As a result of the strike, only 1.1 million pounds of fish were landed at Boston Fish Pier during the week ending May 10.

Whiting Again Being Processed in Boston

A Boston Fish Pier firm recently commenced processing h. & g. whiting, the first in two years. On May 1 a trip of 47,000 pounds was landed and processed. Facilities have been established in the large freezer on the Pier.

A Gloucester vessel landed 100,000 pounds of round whiting at Boston May 8, which represented the largest volume round whiting landings for many years.

To Help Develop Fisheries of Chile

Dr. William Hampton, former manager of the Birds Eye Fisheries Laboratories, General Foods Corporation, Boston, has been appointed fisheries technologist of the Food and Agriculture Organization's Fisheries Mission to Chile. The Mission will investigate the actual and potential role of the fishing industry in the economy of Chile; will attempt to identify factors limiting production and marketing and will prepare a draft plan for fisheries development.

John S. Brady

John S. Brady, 55, of Milton, died unexpectedly on May 30 after playing a round of golf. He was the president and owner of Gloucester Seafoods Corp. and the New England Fillet Co. of Boston.

He and his brother, William J. Brady, treasurer of both firms, founded the Boston firm in 1931 and the Gloucester firm in 1939.

NEW BEDFORD Expands Scallop Advertising

The program to promote and advertise New Bedford quality seafood products will be spread further and to more people in a stepped-up advertising campaign planned by the New Bedford Seafood Council and supported by fishing vessel owners, crew members and members of allied industries.

The volunteer-contribution program headed by John F. Linehan, organizer and manager of the Council, has spread nation-wide and is credited with maintaining a steady demand for scallops, which has resulted in a higher price level.

Following a request by Mr. Linehan, the Fish & Wildlife Service reports that they have distributed food press releases to more than 1,800 food editors. These releases contain various scallop recipes and were sent to food editors of radio, press, television and to dietitians, home economists, extension service and similar groups interested in food preparation.

Wants Quaker Oats Plant at New Bedford

Mayor Lawler of New Bedford last month called upon an audience of 700 to support his efforts to develop the waterfront and to bring a plant of the Quaker Oats Co. to the city. The Mayor read three letters from various parts of the country where Quaker Oats has other plants, and the letters all stressed the point that there is no odor from the process involved.

During his talk the Mayor brought out that the city of New Bedford is today the third largest fishing port in the country and that with proper administration it could grow considerably more.

Resumes Lobster Dragging

The *R. W. Griffin, Jr.* has resumed dragging for lobster. The first trip netted 9,000 lbs. The *Capt. Deebold* is planning to drag for lobster out of New Bedford as she did last year.

COMBINATION CANADIAN LONG-LINER AND DRAGGER "JEAN AND EDITH" is 61.6' overall, and recently completed her first fishing trip to the Newfoundland-Grand Banks. She was designed by K. Harrison of the Department of Fisheries and Cooperatives, St. Johns, and Capt. William Evans is owner and master. The vessel has capacity of 65,000 lbs., and there are accommodations for 7 men. Power is furnished by a Burmeister & Wain Alpha Type 344 V, 4-cylinder Diesel rated 180 bhp. at 450 rpm.

Trash Landings Increase

New Bedford trash fish landings in April showed an increase of 2,500,000 lbs. over the previous month. The New Bedford fleet has been augmented by six draggers from Stonington, Conn., which helped swell the April hail to 3,194,500 lbs.

One Quahog Boat Still Operating

The *Sunapee* is the only member of the quahog fleet still operating out of New Bedford. The *Martha Murley* and the *Barbara* are sea clamming out of Camden, N. J. The *Monte Carlo, Santa Cruz* and the *Huckleberry Finn* were former members of the quahog fleet.

April Landings Bring Good Price

April landings at New Bedford were nearly a million pounds below the April 1956 figures, and one of the main causes for the decline in groundfish production was that the fleet is concentrating on fluke fishing. Boats have not been catching sizable quantities of fish, but have been realizing a good price for the species in demand.

The April 1957 catch by species included 192,800 lbs. cod; 841,600 lbs. haddock; 75,500 lbs. gray sole; 182,200 lbs. lemon sole; 323,700 lbs. yellowtail; 84,900 lbs. blackback; 34,300 lbs. dabs; 530,300 lbs. fluke; 56,000 lbs. tile; 30,000 lbs. butters; 1,285,200 lbs. sea scallops; and 115,400 lbs. others. The total catch was 3,751,900 lbs.

"Kelbarsam" Makes Valuable Catch

The New Bedford dragger *Kelbarsam* brought up from the sea in her nets last month a $4,000 remote controlled plane target model which has been returned to the U. S. Army. The target was the property of the Army at Camp Wellfleet.

GLOUCESTER Perch Price Still Unsettled

Two special meetings of boat owners and ocean perch buyers failed late last month to provide any solution to the two-weeks-old ocean perch blackout in Gloucester. The Gloucester Vessel Owners' Assoc. met on May 31 and the Gloucester Fisheries Assoc. met the same day to discuss the perch price situation, but no action was taken.

During the two weeks that no perch has been landed, the plant workers have had a small amount of perch on which to work, and a good volume of whiting, but it has meant at the most three days' work a week. Some 500 seafood workers in nine local filleting plants are affected.

Forty local large draggers and 10 southern draggers won't go after ocean perch because of a drop in price. Some local boats are trying groundfishing, and a few more are fishing for species used in animal food.

Word from Washington was expected late last month on the attitude of the Dept. of the Interior on a proposed four-point program to aid the New England commercial fisheries. This program was the result of conferences of commercial fisheries committees of Boston and Gloucester.

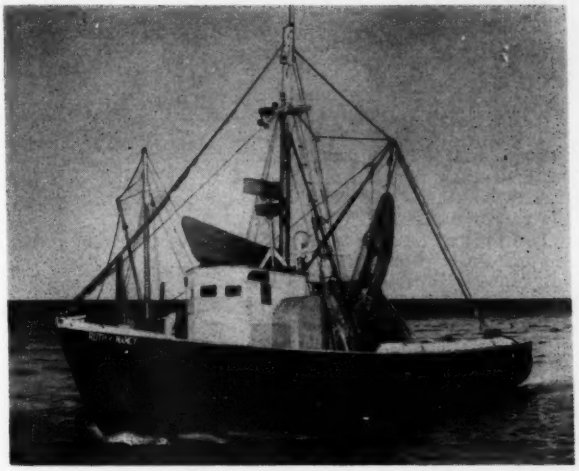
It includes insurance relief, a differential subsidy on vessel construction, a loan program for shore plants and a price subsidy on fish. The latter point was especially aimed at relieving the ocean perch deadlock.

Leaves for Mackerel Fishing

The Gloucester vessel *Saint Ann* left early last month for New York and New Jersey waters where she will seine for mackerel. Usually during the first week in May one or more boats from Gloucester go down to try their luck. They hail at New York for their first trip, and if the price is right, they use New York until the mackerel give out.

Gloucester Firms Stagger Whiting Boats

Now that bigger boats have gone into whiting fishing, Gloucester often gets huge amounts of these fish in a day, and dealers have trouble handling all of it. This problem has been solved by staggering the boats—sending two boats out Monday, two out on Tuesday, etc.



50' dragger "Ruth and Nancy", owned by Capt. Danny Botelho of New Bedford, Mass., and equipped with Bendix marine radar and Bendix DR-12 depth recorder. Installation of the Bendix radar was made recently by Marine Radio & Electric Co. of Fairhaven, Mass. Capt. Botelho uses the radar both as a navigational aid and as a help in his fishing operations. He has installed a radar reflector on his fishing buoy which enables him to keep the buoy in view at all times.

Record Catch of Year

Gloucester wharves on May 20 groaned with the biggest fresh fish tally so far this year. Over 20 boats hailed with 1,625,000 pounds of fish. Most of the catch was in round whiting, with only 370,000 pounds of ocean perch noted.

Processing Plants Merge

The Tri-Cove and Harbor Cove plants at Gloucester have recently merged into the Consolidated Fisheries Corp. On May 24 the company bought the fare of the *Eagle* and processed the fish. It was their trial run.

Leonard Weisman, an owner of the corporation, said the run was successful, and he stressed the point that from the beginning of the operation to the end, the fish were constantly washed. The products will be packaged under the name "Gloucester's Pride".

New Lobster Boat for Rockport

Walter Church of Rockport has a new 38-foot lobster boat, the *Walter Jr.*, which arrived recently from Maine, where it was built by Mariner Beal of Beals. The vessel has 10 ft. 9 in. beam, and is powered with a 6 cylinder engine with a Paragon 2:1 reduction gear.

PROVINCETOWN Fleet Blessing

The 10th annual Blessing of the Fishing Fleet at Provincetown will take place on June 30th, the last Sunday in the month. This year's celebration will mark the first time that the entire affair will be on the new wharf.

The three-day affair will include decorating of the boats and waterfront buildings and wharves on June 29; the blessing on the 30th and athletics between captains and crews, ending with a smorgasbord on the 1st of July.

Arthur B. Silva, chairman of the general committee since the affair was inaugurated in 1948, is assisted this year by Louis Salvador, Joseph Roderick, John Russe, Manuel Phillips, Seraphine Codinha, John Corea, Arthur Reis, Anthony Thomas, Donald Thomas, Custodio Silva and Ernest Deschene.

It is expected that 50 or more draggers and trap boats, as well as sports fishing craft, will join in the gayly decorated circle around the large harbor.

Louisiana Shrimping Delayed By Weather Conditions

The shrimping grounds opened, according to Conservation regulations on April 15, but this year unusual and abnormal weather conditions delayed the start of the pack, which usually begins the first of May. As late as the 16th there was still no prospect for production beginning until the weather changed.

The limited catches which were made were not sufficient to take care of the immediate demand, and as a result the price of fresh shrimp soared even higher than last year. All indications point to the fact that selling prices will remain at about the present level.

Shrimp Trawler License Bill Passed

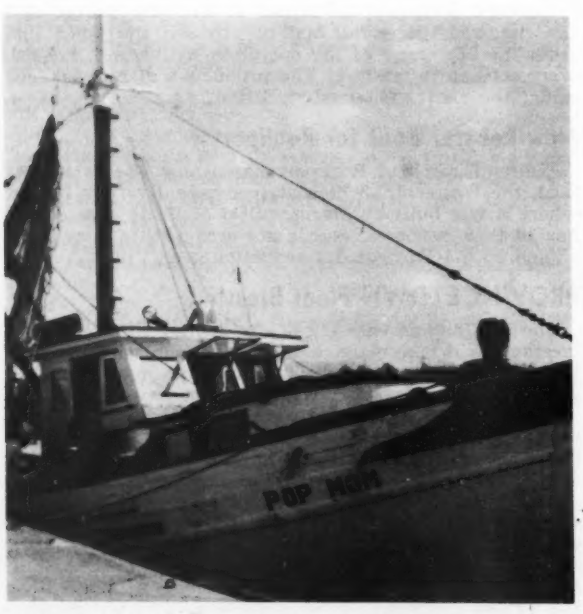
The Louisiana Senate on May 22 passed a concurrent resolution suspending collection of the license fee for shrimp trawlers. The vote was 25-6.

Wide Distribution of Shrimp Recipe Book

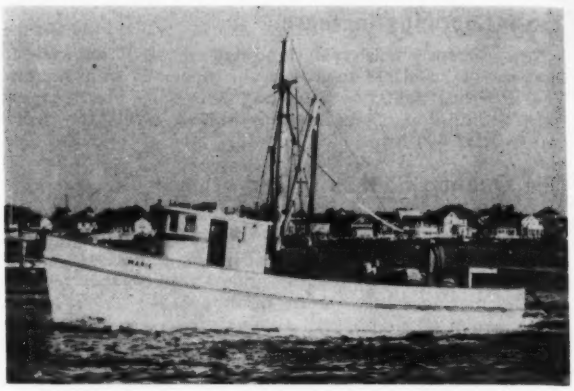
About 50,000 copies of the new recipe booklet "Shrimp Tips from New Orleans" have been purchased during the first few months it has been on sale. Reports have been received of interesting and unique uses to which the booklet has been put.

Housewives have used the booklet as place cards and place mats by writing their guest's names on the cover. The recipe booklet also has been used as card table prizes and as souvenirs for the audience to take home after a screening of the two accompanying motion pictures, "Shrimp Please" and "Shrimp Tips from New Orleans". Processors, wholesalers, distributors, and retailers of shrimp are finding the recipe book to be a very popular means of promoting their sales.

The recipe booklet is available from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., at 15 cents a copy, with a 25 percent discount on purchases of over 100 copies. The two sound, color, 16 mm., motion pictures are available on loan from the U. S. Fish and Wildlife Service free of charge.



50' trawler "Pop Mom" owned and captained by Charles Renard of Delcambre, La. She is powered with a 165 hp. General Motors Diesel, and has Stroudsburg hoist.



Abel Henrikson's 55' fishing boat "Marie" of Wildwood Crest, N. J. Her equipment includes General Motors 6-71 Diesel with 3:1 Twin Disc reduction gear and 38 x 28 Columbian propeller; Bendix depth sounder, Wickwire wire rope, and Ritchie compass.

New Jersey Bill Would Permit Pound Netting in Delaware Bay

Senate action on a bill which would permit erection of pound nets in Delaware Bay from February 15 to May 15 was delayed last month pending conferences with sportsmen and commercial fishermen. The bill was passed 48-0 in the Assembly.

Opponents of the measure contend a four or five inch minimum mesh size on the pound nets would permit catching of bunkers, but would allow the passage of a large part of the weakfish. The bill presently calls for a two and one-half inch mesh.

Robert E. Kay, who sponsored the bill, said he had no objection to amending the bill to permit the passage of weakfish through the nets.

Would Enlarge Fish & Game Council

Divergent views were expressed by farmer and sportsmen representatives at a hearing conducted by a New Jersey Assembly committee on a bill to increase the membership of the State Fish & Game Council from 11 to 12. The measure would divide the Council into two parts. The first would consist of three farmers and three sportsmen, while the second part would consist of three sportsmen and three commercial fishermen. The extra member to be added would be a commercial fisherman.

Landings Increase

Landings of fish and shellfish at New Jersey ports during February totaled 3.7 million pounds valued at $559,000. Compared with the same month of 1956, this was an increase of 28,000 pounds in volume, but a decrease of $71,000 in value.

Leading species of food fish during the month were fluke, scup or porgy, whiting, surf clams, and oysters.

Would Allow Oyster Dredging in Lower Bay

The Assembly last month passed and sent to the Senate a bill which would permit oyster dredging over a 40,000 acre area in the lower Delaware Bay. The measure, which was defeated April 22, was brought up again by Assemblyman Charles E. Gant of Cumberland.

Commercial oyster dredging in the area along the western coast of Cape May County from Cape May Point to the area of Pierce's Point, is now prohibited and the area is preserved for development of new oysters. Assemblyman Robert E. Kay of Cape May said dredging in the Delaware Bay would deplete the bottom.

Florida Bills Affect Shrimp Fishermen

The Florida Senate passed on May 23 a bill which enables the State Conservation Department to declare "off limits" sections of the Tortugas shrimp beds off Key West. The protection is necessary to insure that the rich shrimp beds will not be fished out, and will prevent taking of small shrimp.

The closed season will become effective only when the Conservation Director certifies it is necessary, after tests are made. The bill is a phase of what eventually will be a joint State-Federal program to preserve the Tortugas shrimp bed, which produces one million dollars worth of shellfish annually.

A bill designed to set up local control of shrimp fishing, drawn by Sen. T. Drew Branch of Sumatra, has passed the Senate. It would require Franklin County Commissioners on January 1 of each year to appoint a committee which would determine when the taking of shrimp should be opened and closed in the waters of Apalachicola Bay and St. George Sound or any area thereof.

The committee would be composed of five reputable Franklin County citizens, including two experienced fishermen, two experienced seafood dealers and one businessman not directly connected with the fishing industry.

Sen. Branch introduced another bill last month which would require the State Conservation Supervisor to have at least 10 years' experience as a seafood producer or dealer, and his agents to have not less than five years' such experience.

This bill was opposed by State Conservation Supervisor Ernest C. Mitts, who said he and most of his agents would fail to meet the proposed qualifications. He also said that some of the State's best agents are career men who have had no experience in commercial fishing, and he does not feel that seafood industry experience is necessary for enforcement agents.

Shrimp Trawler Explodes and Sinks

A big shrimp trawler, the *Smiles*, Capt. Alton Whidden, exploded and sank in Apalachicola Bay last month, but the skipper ad one crewman, Carl Russ, were able to jump overboard minutes before the explosion. The $25,000 boat was owned by W. F. Randolph of the United Seafood Co.

Would Abolish Fish Commission

At Tallahassee on May 1, a constitutional amendment that would abolish the Game and Fresh Water Fish Commission and set up a State Conservation Commissioner with cabinet rank was proposed by Sen. Bishop of Lake City.

The measure, which would require a three-fifths vote of the Legislature plus an approving vote of the people at the next general election, would put under the new cabinet official supervision of all conservation agencies, including forests, parks, geology, game and salt and fresh water fish.

New Crab Plant Operating in Cross City

R. C. Bradshaw of Crisfield, Md. has opened a new and rapidly expanding crab meat packing plant in Cross City, and is supplying seafood from New York to Miami and west as far as Utah.

The plant, which soon expects to be employing 40 or more pickers, buys crabs from Cedar Keys to Panacea, paying six cents per pound for crabs delivered in Cross City.

"Monkey Fishing" Bill Killed

On May 17 a bill designed to put a little more "muscle" into the Game and Fresh Water Fish Commission's campaign against "monkey fishing" was killed by the Senate Game & Fisheries Committee. Introduced by Sen. Gautier of New Smyrna Beach, it would have made possession of "monkey fishing" equipment on inland waters a violation of the law.

Monkey fishing involves the use of an electrical current by commercial fishermen to stun fish so they can be scooped up with a net.

The 67' shrimper "Frances R." operates out of Fernandina, Fla., and was built by Diesel Engine Sales Inc., St. Augustine. She is owned by C. G. Russell and O. Middleton of Kingsland, Ga., and is finished with International paint. Equipment includes 6-110 General Motors Diesel, 50 x 44 Columbian five-blade propeller, Goodrich Cutless rubber bearing, Surrette batteries, Columbian rope. She has Styrofoam hold insulation.

Landings Show Increase

Preliminary data on the production of fishery products at Florida ports during January indicate that landings amounted to 13.7 million pounds. This was an increase of 3.0 million pounds compared with January 1956. The overall increase was primarily due to larger landings of bluefish, black mullet, groupers, Spanish mackerel and shrimp.

Shrimping Publicized in "Geographic"

Key West shrimping is the subject of a feature article in the May issue of National Geographic magazine. Illustrations include a dramatic picture of the shrimp fleet in harbor, and color photographs show the crew sorting shrimp from "trash" caught in the net, heading the catch, washing it and packing it in ice bins.

The story follows Capt. Hammy Lowe on the Key West trawler *My Lettie*, describing shrimping procedures, from dragging the big net over the coral mud bottom of the Gulf to packing shrimp in boxes of ice and loading it on trucks bound for Miami and points beyond. Clarence P. Idyll, Professor of Marine Biology at the University of Miami, wrote the article.

Jacksonville Man Designs Boat for Indonesia

A new experimental fishing boat, the *Nona D. Brown*, named after a Jacksonville housewife, recently made its first trial run in Indonesia. Mrs. Brown is the wife of the boat designer, Kennedy Knabe Brown. The couple have returned to the U. S. after being in Indonesia since January, 1955, where Brown worked for the U.S. International Cooperation Administration.

A second boat of this type is now under construction, and eight more are in the planning stage. The Indonesian marine fisheries program, in which the U. S. has been cooperating for the last six years, has as its objective the more effective utilization of Indonesia's tremendous fish resources. The 100 motorized fishing vessels to be found throughout Indonesia in 1951 have been expanded into a fleet of 800.

The "Aldebaran," 55-foot Hatteras Trawler owned by R. B. Leland and A. C. Stroman, Jr. of McClellansville, S. C. The boat was built by Morehead City (N.C.) Shipbuilding Corp., and is powered with a 6-71 General Motors Diesel.

South Carolina Bill Would Restrict Shrimp and Crab Trawling

The House of Representatives on May 7 gave a second reading to a measure restricting the operation of shrimp and crab trawlers along the South Carolina coast. The bill in its present form prohibits trawling at any time within one-half mile of a fishing pier extending into the ocean; prohibits trawling within one-half mile of the shoreline of Horry County; establishes a prohibited zone off the inhabited beach area of Hilton Head Island during the period May 25-Sept. 15; permits trawling close inshore along the shoreline off the property owned by the Hilton Head Agricultural Corp., since that area of the beach is not used for residences or bathing.

In other legislative action, a bill was introduced in the House last month which would set up sanitary regulations for commercial fisheries in counties bordering along the Atlantic Ocean.

The bill provides that persons operating or maintaining facilities for catching of salt water fish, before operating or catching or selling such fish, would construct a building not less than 25 x 25 located entirely above the high water mark of the Atlantic Ocean.

The building would have a sufficient water supply and adequate septic tanks and tile field connected to adequate plumbing facilities to provide for the disposal of waste matter, refuse or water from hand or fish washing.

Kochins Gets New Shrimper "Violet K."

The Morehead City (N. C.) Shipbuilding Corp. recently gave a test run to the *Violet K.*, a 55-foot Hatteras Trawler which was built for John Kochins of Charleston, S. C. The shrimper is powered with a General Motors 6-110 Diesel engine with a 3.75:1 reduction gear. Tanks aboard include two 800-gallon fuel tanks and one 300-gallon fresh-water tank.

The vessel is equipped with a 750-watt Onan auxiliary generator; four 8-volt Surrette batteries; a 515-½ T Stroudsburg hoist; a Metal Marine automatic pilot; a Ritchie 5" compass; and a 32-volt Mile-Ray searchlight.

Oyster, Clam Seasons End

The legal season for gathering oysters and clams ended on May 1 in South Carolina. Along with the ending of the 1957 season, came the end of a long-standing right to gather oysters from State-owned beds for individual consumption.

A new law goes into effect this year, prohibiting such oyster gathering. The new statute provides for establishment of public areas where individuals may gather oysters for home consumption.

Connecticut Laboratory Successfully Transplants European Oysters

Dr. Victor L. Loosanoff, director of the marine laboratory at Milford, has proved that oysters from Holland can grow along the coasts of Canada, Massachusetts, Maine and Washington. Maine now has a thriving oyster colony, and there is another one at North Bay, Wash. The Canadian Maritime Provinces are greatly interested in the possibilities.

The oysters are imported from Holland, but are called English oysters. Dr. Loosanoff recalled that the English oyster thrived in cold water along Europe's Atlantic Coast from Spain to Sweden, and conceived the idea of transplanting it into cold North American waters.

Unlike the American oyster, the European oyster expells and fertilizes its eggs within its shell. The larvae are held within the gills of the parent, growing as they feed on micro-organisms siphoned in from the water around them.

When the larvae are expelled, they are free swimming for a brief period before they settle to the bottom and grow to a size where they could be eaten on the half-shell.

Dr. Loosanoff's transplanted oysters are doing well both in Maine and Washington, and he has high hopes that the time will come soon when they can be grown in commercial quantities in these and other regions.

Named Chaplain of Fishing Fleet

The Rev. Thomas M. Londregan, pastor of St. Mary's Church, has been named as Catholic Chaplain of the Stonington fishing fleet. Father Londregan for several years has been active in the affairs of the dragger fleet, and has been instrumental in helping plan the annual Blessing of the Fleet program.

Draggers Have Good Month

Stonington fishing draggers had their best month of the year during May, landing more than a million pounds of fish. Total catch for the month was 1,114,500 pounds, including both market and trash fish. Production would have been considerably higher had not several boats taken the bulk of their catches in to Point Judith, R. I.

Southeastern Fisheries Association Elects Ferguson President

Members of the Southeastern Fisheries Association held their fifth annual convention at Key West, Fla. last month, and named John Ferguson, who operates the St. George Packing Co. in Fort Myers, as president. Selected to serve with Ferguson were: A. Maitland Adams of Key West, vice-president; W. R. Bailey of Jacksonville, vice-president; Don McKee, re-elected secretary; and Frank Bentley of Key West, treasurer. The outgoing president is J. Roy Duggan.

With one of the largest groups in attendance in the five-year history of the organization, members spent considerable time in discussing proposed legislation which would strengthen the conservation of commercial fish and shrimp.

The sessions came to a close with a panel discussion on the subject: "How Can We Develop the Seafood Industry in the Gulf and South Atlantic?" The discussion was led by Dr. C. P. Idyll of the University of Miami and covered a multitude of subjects ranging from voluntary conservation to more modern equipment for taking and handling seafoods.

Next year's convention, to be held in Mexico City, will be a joint meeting of the Southeastern Fisheries Association, the Texas Shrimp Association and the Shrimp Association of the Americas, which includes groups from Mexico and Central America.

B.F.Goodrich

Float insurance for a $40,000 net

"There's nothing like Spongex® plastic seine floats. They are light, tough, durable and economical—and the best possible insurance for protecting a net" says Anton Misetich, skipper and part owner of the Anthony M, San Pedro, California.

"Our net cost about $40,000", he continued, "but its worth at sea exceeds all monetary considerations. Since our livelihood depends on this net, it is simply good business and common sense to use the finest seine floats.

"To support the net we use 4920 Spongex floats—with cork we would need 6560. Besides this, Spongex floats are three times lighter and do not become water logged with continued use."

Skipper Misetich is a member of the Fishermen's Cooperative Association, a

group of 150 boats using over 200,000 Spongex floats.

Mr. Mason Case, general manager of the Cooperative, which incidentally is the largest fish producing organization tonnagewise in the nation, says, "Spongex floats have a very small replacement factor, occasioned only by accident—the breakage average in four years' experience is about 1% per year. The proof of their success is shown by the fact it's the only float we can sell today".

Spongex floats are available in a variety of sizes ranging from 1½" x 3" to 6" x 7½". If you are interested in having Spongex floats for your fishing operation, write to B. F. Goodrich Sponge Products, a division of The B. F. Goodrich Company, 392 Derby Place, Shelton, Connecticut.

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HDD-8-150	150	125
HDD-8-175	175	150
SMR-8-188	188	152
SMR-8-209	209	169
SMR-8-230	230	186

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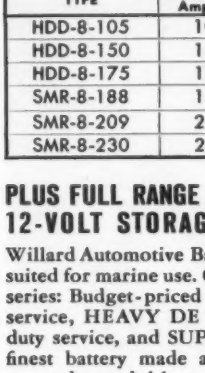

Compact, easy-to-carry unit contains Willard Battery, built-in charger, plug-in outlet for lights, radio, and other battery-powered appliances. Complete unit snaps in or out of false bottom, which may be fastened to boat to prevent tipping or spilling.

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246 East 131st Street, Cleveland 1, Ohio

Great Lakes Perch in Saginaw Bay Believed to Be Overcrowded

There may be too many perch in Saginaw Bay, according to Salah El-Din El-Zarka, an Egyptian who studied fluctuations of the perch populations as part of his work toward a doctor's degree in The University of Michigan Department of Fisheries.

El-Zarka notes that the average annual commercial catch for 1917-1955 weighed barely one-quarter as much as the yearly average (almost two million pounds) for 1891-1916. The perch aren't growing as fast as they used to, he believes, because there are too many of them. "Perch of 1929-1930 samples reached legal length in three years, but those taken in 1943-1955 required more than five years to attain the same size," El-Zarka says. "At the same time, the proportion of legal-sized fish in trap net catches dropped from 74 to 11 percent."

The growth of Saginaw Bay perch, once the fastest growing of any in the Great Lakes, in 1943-1955 was the slowest yet reported for Great Lakes waters, El-Zarka found. "The decrease in growth rate was believed to have resulted from a more than sevenfold increase in the population density. A 'space factor' rather than competition for food may account for the decline in growth rate. Fish of the 1943-1955 samples gave no evidence of a scarcity of food.

Ralph Hile, fishery research biologist with the Federal Great Lakes Fishery Investigations, says biologists have never been able to answer for sure whether overcrowding, independent of food supply, will slow up growth. But "Saginaw Bay is suffering from too many perch if it is suffering from anything," he continues.

Hile says biologists have recommended that the State Legislature lower the legal perch limit in the bay to eight inches on a "trial run" basis as one way of cutting the perch population. This is in line with El-Zarka's finding that "the present size limit is greater than is needed to protect immature fish," because the fish are mature at five to seven and a half inches.

Big Lamprey Kill

An electric trap in the Amnicon River in Wisconsin killed more than 1500 sea lampreys during one day and night last month. The kill was the largest ever made in a 24-hour period. The lampreys were from 15 to 22 inches long and weighed up to 14 ounces. They were coming up the river to spawn, preferring streams with muddy bottoms.

S. V. Szepe DeAngeli, a Hungarian refugee and an expert in fish diseases and diets, who is now employed as a disease and dietary expert at a Wisconsin fish hatchery, believes he has the answer to the lamprey eel problem.

He says that minnows eat the baby lampreys, and he feels certain that if minnows were propagated in rivers and creeks where sea lampreys spawn, the lamprey eel problem would be solved.

Ohio Landings Increase

Total landings of fishery products by Ohio commercial fishermen operating in specific areas of Lake Erie during March amounted to 1.6 million pounds—an increase of 704,000 lbs. compared with the corresponding month of 1956. The leading species during March were carp, yellow perch and yellow pike, with these three species accounting for 83 percent of the total catch.

Record Catch of Sheepshead

Four contract commercial fishermen crews and one Wisconsin Conservation Department crew made a record catch of 600,000 pounds of sheepshead in Lake Winnebago in one week in April. The fish were taken in trap nets.

Of the more than 7,600,000 lbs. of rough fish, mainly carp and sheepshead, taken from Wisconsin inland waters in 1956, State crews took, 3,700,000 pounds, and sales brought $156,300. Contract commercial fishermen took 3,900,000 lbs. and had sales of $126,500, on which the State's commission was $5,170.

These figures were given by Dr. Edward Schneberger, Superintendent of Fisheries, in a report at the May meeting of the Wisconsin Conservation Commission. Dr. Schneberger reviewed the State's rough fish program, pointing out that the number of State rough fish removal camps had been reduced from 12 to 5 in the last 10 years or so, while operations by contract commercial fishermen were encouraged.

The commercial fishermen once were required to pay the wages and expenses of State supervisors and 25% of their gross receipts as commission, but now the usual commission is 10% and the wardens supervise the operations only as necessary.

Lamprey in Medical Research

The sea lamprey, which preys on Great Lakes fish, is being groomed by a hearing specialist for an important role in acoustical research at The University of Michigan. According to Dr. Merle Lawrence, professor of physiological acoustics, lampreys are being fatted in a huge fish bowl at his laboratories, for use in research on diseases of the inner ear.

1-2-3-4-5-6-7...

Monel shafts drive all of National Steel's new tuna clippers!

First came the *Dominator* and the *Cabrillo*. National Steel & Shipbuilding Corporation, San Diego, Calif., built these clippers to range far—the Galapagos, even Peru—to bring back 340-ton loads of tuna.

The West Coast wanted more. Ordered: the *Independence* (3), *Concho* (4), *Missouri* (5), *Westport* (6), and *Elsinore* (7).

In each of these seven giant fishermen, National Steel protected owners' profits with Monel nickel-copper alloy shafting.

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Maryland Clam Dredging

(Continued from page 21)

Figure 2, a schematic drawing of the hydraulic clam dredge in digging position in the bottom with one side cut away, presents a simplified version of the processes involved in operation of the dredge. Currents from the jet pipes loosen the bottom just ahead of the dredge and flow aft through the scoop, carrying with them bottom materials. Everything too large to pass through the 1-inch mesh of the conveyor belt is retained on the belt and elevated to the surface. Coarse sediments, shell fragments, and other dense objects of small size fall through the conveyor belt at or near its lower end and accumulate in the trench. The finer particles of sediment are carried backward and upward in suspension and may pass through the wire-mesh top of the conveyor housing or through the conveyor belt. Observations indicate that most follow the latter course. Many are redeposited in the trench or nearby. Many others remain in suspension for relatively long periods and are carried considerable distances before settling out.

A crewman stands near the after end of the conveyor and picks the marketable clams off the belt as they pass. Unwanted materials which are elevated to the surface are allowed to remain on the belt and fall back into the water at the after end of the conveyor. Most of these materials are redeposited in the trench. If there are oysters among them, there is little chance that they will survive, for in time—usually a few days to a few weeks—the trench will have filled to the level of the surrounding bottom and the oysters will be covered with several inches of sediment.

Hydraulic clam dredges now in commercial use operate efficiently in water up to about 8 or 9 feet deep, and some dredges with unusually long scoops have been used with more or less success in 10 to 12 feet of water. Minimum depth of operation is governed by the draft of the boat.

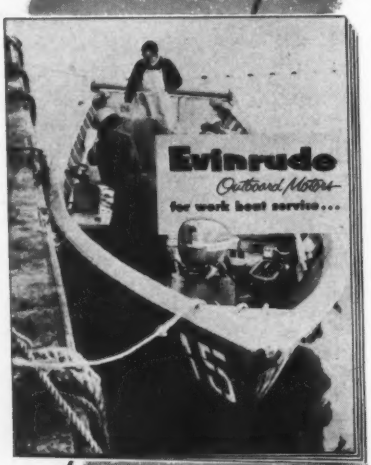
The rate of dredging is rather variable and is governed by many factors, including type of bottom and skill of the operator. The average rate of commercial clam dredging is between 1200 and 1300 square feet of bottom per hour. At this rate, coverage of 1 acre of bottom requires about 35 hours. Therefore, the clam dredger must work where there are at least 50 bushels of marketable clams per acre, on the average, to make a reasonable living. This is a most important limiting factor on the soft shell clam fishery.

Dredge Is Very Efficient

The hydraulic dredge harvests a very high percentage of the clams in its path. Tests conducted in 1956 by the Fisheries Research Board of Canada with an experimental model of this dredge indicate that its efficiency in catching clams of marketable size approaches 100 percent. In tests conducted by the same agency in 1955, less than 1 percent of the clams caught were broken, and breakage of clams of smaller size which passed through the conveyor belt mesh was similarly low. Breakage occurring in both experimental and commercial dredging in Maryland was found to be from 1 to about 4 percent of the marketable clams.

Conflicts of interest exist in the use of Maryland's tidewater resources, and some—but by no means all—of them center on the use of the hydraulic clam dredge. Some result from disregard of the law or from inherent difficulties in its observance or enforcement; some are caused by gross lack of consideration for the traditional rights of shore owners, and others by the presumption of rights which have no basis in law or tradition. Most of the conflicts related to clam dredging appear to be capable of resolution by reasoning and moderation among the special interest groups who share the economic and recreational resources of Maryland's tidewater.

new book



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Virginia Fishermen Catch Hundred Tagged Rockfish

Nearly one hundred tagged rockfish have been caught recently by sport and commercial fishermen, and the tags have been returned to the Virginia Fisheries Laboratory.

An effort to investigate the movements of striped bass within the Chesapeake Bay and along the coastal waters of the eastern seaboard was inaugurated last February when 384 stripers were tagged and released in the York River. In March, 421 fish were tagged in the James River, and in April 641 in the Rappahannock.

Crab Catches Improve

According to Capt. Chase Morgan, who operates the *Mary E.*, a crab runner from New Point to Cape Charles, there have been no large catches of crabs in the Hampton Roads area so far. The first half of May crabs were very scarce; around the middle of the month the catch picked up considerably, and on May 21 the average landing per boat was from four to nine barrels per morning. This was more than the average catch at the same time last year, and the price paid was one cent more.

The average crab production over a 24-hour period in the Hampton Roads area during May ranged from 6,500 lbs. to 10,000 lbs. Many more crab pots will be fished this season because the legal limit of 50 pots per license has been removed.

Croakers, which came in great numbers for a while in April, have thinned out considerably, according to Walter Garrett of the Chesapeake Seafoods Co. at New Point. Mr. Garrett expects them to return in greater volume in July and August, the months when this fish is usually more plentiful.

Haul seines are reportedly catching more croakers than are pound nets. Ernest Callis caught 50 boxes in the Rappahannock on May 20.

A few shad are still being caught in most sections. The Spring runs of alewives and shad fell short of expectations, according to the Fish & Wildlife Service. Some canning and salting of alewives took place.

Oysters are still being shucked in the Hampton Roads area. Through May, an average of from 500 gallons to 1,000 gallons were produced over a 24-hour period.

Virginia oyster tongers found little to complain about in the past season, according to the Fish & Wildlife Service. Oysters were not plentiful enough to depress the price, nor scarce enough to scale down the tonger's earnings.

The great James River seed-oyster bed furnished employment to many hundreds of tongers. Demand for seed was good, and it improved toward the end of the season.

Landings for 1956 Show Gain

The Fish & Wildlife Service reports that the Hampton Roads area for the year 1956 had 31,799,400 lbs. of fish, as compared to 29,653,000 in 1955, an increase of 2,146,100 lbs. Clam production for 1956 amounted to 5,760 bushels, with none reported for 1955. Crab meat was more plentiful in 1956 than in 1955, with 2,831,400 lbs. produced as compared to 2,408,800 in 1955.

Oysters shucked for 1956 in the Hampton Roads area amounted to 778,800 gallons, as compared to 840,960 gallons in 1955. The Eastern Shore and Lower Northern Neck both had an increase in production of oysters in 1956 which brought the State's total production higher than it was in 1955.

The Eastern Shore area had an increase in hard crab production and in soft crabs also.

Pound Fishermen Doing Well

Tangier pound fishing is good, and these fishermen are trapping menhaden which they sell to crab potters at $1.50 a bushel.

Although the crab packers at Tangier are paying 4 cents apiece for peeler crabs, the crab catchers, both hand netters and scrapers, are not doing too well. According to reports, hand netters are catching from 75 to 100 peelers a day and the scrapers from 100 to 200 a day.

Marine Borers

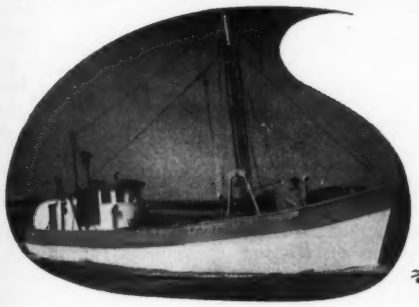
(Continued from page 13)

Boats do not always have a worm shoe under the keel to prevent the keel itself being damaged, but we suggest that more attention be given to this seemingly unimportant member. If the worm shoe is properly fitted and there is a strip of Irish felt between the worm shoe and keel, the felt chokes the marine borer as he eats his way through it. It can easily be renewed when need be.

Chemical Solutions Are Effective

Several chemical solutions which protect the wood against fungi, termites, borers, etc. have been developed, and they poison the pests right at the start, do not have an odor, can be painted over and are inexpensive. One of the best known has a copper naphthenate base, and by filling the fibers of the wood with metallic coating prevents attack by fungi and also makes the wood unpalatable to wood-boring insects. Water repellents in chemical solution set up a vapor barrier against

From The NORTH ATLANTIC



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the moisture which causes the wood to swell and warp. There are two shades of this product—clear and green; we favor the green, as it is easily noticed if a small area has been skipped when covering the surface.

The protective material should be soaked right into the wood—the bare wood, preferably, for best results. It can be painted over, is non-poisonous, and users do not have to wear rubber gloves. The product can be brushed on, sprayed on, or the article can be dipped if it is small enough. One application will last for many years; the metal base preservative elements do not wash out or evaporate, being non-volatile.

Not only is this material useful to protect wood from damage, but it has a big potential in saving hundreds of miles of rope from being eaten by these pests. It reduces slime and fouling of the ropes and is recommended for nets, buoy lines, float lines, trawl lines, trap lines, etc. that are submerged in water practically all the time. This product also keeps down mildewing.

There is another marine coating of the anti-fouling kind, which though applied with brush or spray, is not a paint. It sets up hard and will sluff away for many months, releasing poisons which prevent marine growth. The product is applied directly to the bare wood.

Then there is another substance which protects against termites and other types of chewing vermin. It will not wash out and is effective on the underbody. One gallon covers up to 400 square feet of surface and is inexpensive. Timber lasts four times as long with it.

There are a number of copper bottom paints which do a worthwhile job of warding off the marine organisms. One of these is a metallic coating which provides protection, brushes on and dries hard. Another product which is different is a clear, air drying oil of special formula which soaks deep into the wood fibers, providing a waterproof barrier. It contains no poison, does not give off dangerous or offensive fumes and protects against dry rot and worms by keeping the moisture content of the wood lower than is necessary to support these destroyers.

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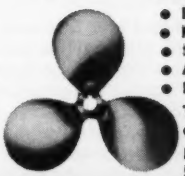

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EQUIPMENT and SUPPLY NEWS

New Packaging for Brownell Twine

Brownell twine in new polyethylene package.

Brownell & Co., Inc. of Moodus, Conn., volume manufacturers of Nylon Seine Twine, have just announced a brand new skin-tight, tubular polyethylene packaging which is now available on all their twines. A 3-color catalog sheet offering complete descriptive information can be obtained by writing Dept. P at Brownell.

The new type of packing for Brownell twine won't unwrap or tear apart. Also, there are no open seams to attract dirt or dust, since the Brownie package is tubular polyethylene and its adherence to the twine is skin-tight. Each Brownie package, in addition, features the Nylon Filament Seine Twine Table on each packaged size.

Caterpillar Certifies Engine Power Ratings

A program of power certification, designed to provide the Caterpillar engine owner with certified proof of his engine's horsepower capabilities, has been introduced by Caterpillar Tractor Co. It consists of the issuance of a notarized power certificate to purchasers of Caterpillar marine engine arrangements, attesting that the engine is capable of the full capacity of its horsepower rating. The program is termed "Certified Power for Cat Diesel Engines," and is said to be the first such action ever taken by a Diesel engine manufacturer.

The Engine Power Certification, issued by Caterpillar Tractor Co. at the time of engine delivery, contains a certification of Maximum Output Capacity. In addition, the document records the engine model and arrangement, the engine serial number, and shipping data. The engine's power and speed setting is also listed, along with the engine's individual power rating, either intermittent, rated or continuous.

Change in Decca Radar Service in New York

D. H. Toller-Bond, President of Decca Radar, Inc., announces that all service and sales of Decca radar in the New York area are now being handled directly by its own organization at 386 Fourth Avenue. This new arrangement has been made in order to provide for all Decca radar users and customers the highest standard of technical and sales service. A fully trained staff of technicians and stock of spares are available in New York to meet any demand, and a full 24 hours' service will be in operation.

Nation-wide service throughout the United States will continue to be operated by Decca Radar representatives as in the past.

Herrick Named L. W. Ferdinand President

Paul B. Herrick has been named president and treasurer of L. W. Ferdinand & Co., Inc., Newton, Mass. He brings to this long-established concern a wealth of experience in merchandising and sales, and is introducing progressive sales plans coordinated with new production methods.

L. W. Ferdinand products include Polyseamseal, which has proven to be a superior bedding and seam compound for boats. Ferdiseal Liquid Marine Sealer packed in polyethylene bottles is another product for narrow seam sealing.

Dentpak by L. W. Ferdinand simplifies the resurfacing of wood and metal, providing a non-shrinking, permanently bonded resilient material that can be built up to fill dent areas and may be ground, buffed or polished to a smooth finish. In pace with the extensive use of color, L. W. Ferdinand is producing polymer adhesive compounds in a wide range of pastels in addition to black and white.

Danforth Introduces New 130-Pound Anchor

Danforth Anchors, 2137 Allston Way, Berkeley 4, Calif., manufacturers and distributors of anchors ranging from 2½ pounds to 21,000 pounds, have announced the addition of a new anchor to their line. It is the 130-pound Danforth Standard (Model 130-S). This anchor fills the gap that formerly existed in the Standard line between the 85-S and the 180-S.

Like all Danforth Standard anchors, the new 130-S is fabricated of special high-strength alloy steels having two to four times the strength of mild steel. The 130-S was made available to the marine markets on June 1.

New Bulletin Describes Ace Plastic Piping

Bulletin M-32, which is available from the Marine Department, American Hard Rubber Co., 93 Worth St., New York 13, N. Y., describes applications and technical properties of Ace-Ite, Riviclor, and Supplex plastic piping for shipboard and shipyard use. Also featured in this four-page leaflet are other Ace plastic marine products, including Ace-Flex tubing for protecting stays and rigging, glass-fiber-reinforced molded plastics for furnishings, fittings and housings, hard rubber pumps, neoprene- and rubber-lined steel equipment, and tire-cord-reinforced plastic hose.

Floatex Has Full Line of Plastic Floats

A line of rigid foam plastic floats in all types and sizes from 3 to 6" in diameter and 1½" to 80" in length, is being produced by Floatex, Inc., Berlin Turnpike, Berlin, Conn. These floats have great buoyancy and durability, require no care and will not absorb water.

Sales representatives for the Floatex floats and buoys include National Cork Co., Englewood, N. J., which handles the product on a National scale. Frank W. Winne & Son, Philadelphia, is the representative for part of the East Coast, while L. A. Sandstrom, Jr. of Seattle is the Pacific representative.

Because of increased demand and limited facilities at their present plant, Floatex, Inc. is planning to move to larger quarters at Sterling, Conn. They will have total space of 45,000 square feet at the new plant.

Floatex 4½ x 3½ net floats and 4½ x 18 lobster and crab buoy.

Gray Marine Offers Spare Parts Kits

Gray Marine Motor Co., Detroit 7, Mich., is offering "on board" spare parts kits. Available in two assortments, they contain such vital items as a set of spark plugs, condenser, distributor rotor and cap, ignition points, generator belt, valve springs, engine gasket set, carburetor gasket set, fuel pump repair kit, water pump or pump parts, fuel pump bowl and the 94-page Maintenance Handbook.

In addition to these, Gray also has available a new Emergency Parts Kit, for late model Gray gasoline engines. In this kit, a compact, watertight, see-through plastic box contains a set of spark plugs, distributor cap and rotor, distributor points, ignition points and coil, condenser, and the Maintenance Handbook. Owners ordering these kits are asked to include the complete engine name and serial number, from the engine nameplate located on the reverse gear cover plate or manifold.

Griswold to Head Norseman Marine Sales

Harry S. Griswold.

Ralph G. Klieforth, Chairman of Norseman Marine, 105 Nevada St., Oshkosh, Wis., has announced that Harry S. Griswold recently was placed in charge of Norseman Marine Sales in the capacity of Vice President and Sales Manager. Mr. Griswold was formerly with Nordberg Manufacturing Co. of Milwaukee, where he acted as Assistant Sales Manager of the Gasoline Marine Engine Division.

Norseman Marine of Oshkosh is now producing and distributing the complete line of "Nordberg" gasoline marine engines in four and six cylinder models in a range from 60 to 155 hp. The firm has several important additions to its line, including a 23 hp. marine engine and V-Drive models in 105 and 155 hp. sizes.

Norseman Marine has recently mailed to all Naval Architects of record a complete file of installation dimension drawings for their line of Nordberg gasoline marine engines. These dimension drawings, which are prepared expressly for the convenience of designers, are scaled ¾" to 1' and are on transparent stock.

New Book on Care of Outboard Motors

"Keeping Your Outboard Motor in Shape", an up-to-date, authoritative handbook based on the manual prepared by Evinrude Motors as a guide for its factory-trained servicemen, recently has been published by "Motor Boating", 572 Madison Ave., New York 22, N. Y. The book is priced at $1.50.

The publishers have presented what could have been a highly technical and involved subject in an attractive format. In language that the layman can readily understand, the book suggests and describes methods for the proper maintenance and repair of both old and new outboard engines.

Step by step, each carefully and liberally illustrated by diagrams and photographs, the outboard owner is taken from top to bottom, around and through a typical engine. He is shown how and why it works, is told about proper oils and fuels, is directed how to set up a new motor in the boat and is taught how to diagnose various motor failures and get the machine running at peak efficiency again.

The ignition system, carburetor, powerhead, lower unit, fuel system and starting devices are all covered in practical details. Most appropriate for this time of the year is a chapter devoted to Spring tuning-up procedures.

Inspection and mending of netting at the new factory of The Fish Net and Twine Co. in Menominee, Mich.

Fish Net & Twine Plant in Full Operation

The Fish Net and Twine Co., which recently moved its manufacturing facilities and general offices to Menominee, Mich., is now in full production at the new plant. Their move to the Middle West in the center of the Great Lakes area was made to facilitate serving all areas of the country.

The general rehabilitation program which was carried out during the past year on its machines enables The Fish Net and Twine Co. to provide improved service and quality products for the fishing trade. The new operation in Menominee consumes approximately 40,000 square feet of floor space. Murray Grabowsky, former production manager at the R. J. Ederer Co., is general manager.

Products of the firm include "Sea King" cotton seine and pound netting, Nylon gill netting made from "Nylock" twine, "Steel Grey" linen gill netting, cotton gill netting, and "Nycot" combination Nylon and cotton netting.

Cummins Diesel Trouble Shooting Booklet

If you are having trouble with a specific piece of equipment, what do you do? A bulletin just released by the Service Division of Cummins Engine Co., Inc., Columbus, Indiana, recommends that first—you "think before you act." Then ask yourself these questions:

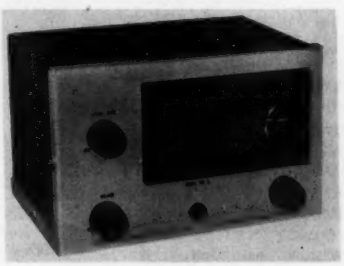
(1) What were the warning signs preceding the trouble?

(2) What previous repair and maintenance work has been done?

(3) Has similar trouble occurred before?

The bulletin is entitled "Principles of Trouble Shooting for Cummins Diesels." It is designed to unfold so that it can be used as a wall chart. On the chart complaints are listed and probable causes are noted.

Apelco Offers New Marine Receiver



Apelco Model SM-3 receiver.

Applied Electronics Co., Inc., 213 East Grand Ave., South San Francisco, Calif., has announced the Model SM-3, a sensitive new marine receiver whose stable characteristics and simplified operation make it well suited for standby monitoring applications.

For utmost stability and elimination of tuning controls, the receiver incorporates five crystal controlled channels within the 2000 to 3000 kilocycle range, permitting distress frequency (2182 kcs.) monitoring as well as coverage of land based telephone and ship-to-ship channels. Absence of background

B.F.Goodrich

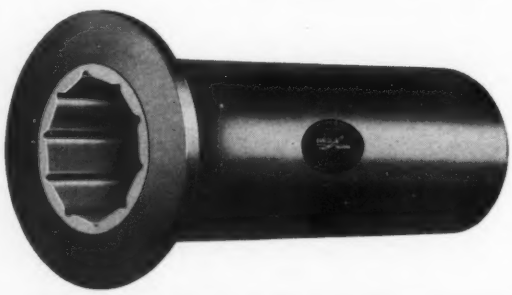
Cutless Bearings

For Propeller Shafts

Standard Equipment on NEW TUNA CLIPPERS

Built by

National Steel & Shipbuilding Corp.



Soft rubber, water lubricated, Cutless bearings give years of trouble-free service on fishing vessels. Resist heat, oil, and wear. Quiet and protect shafts too. There is a size and type to fit your boat.

Available at Boat Repair Yards and Marine Equipment Dealers.

Lucian Q. Moffitt, Inc.

AKRON 8, OHIO

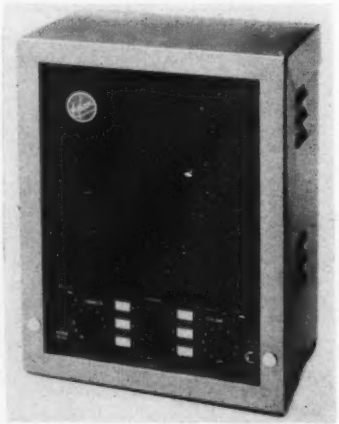
Engineers and National Distributors

noise during standby is assured by the Apelco adjustable Signal Gate.

The Model SM-3 receiver is unusually compact, being only 5¾" high, 9¼" wide and 6' deep. Dynamotor power supply is a separate compact unit. Models are available for 12 or 32 volts DC and 115 AC, with 110 volt DC models a special order option.

New Kaar Telephone Small but Powerful

The latest addition to the marine radiotelephone line offered by Kaar Engineering Corp., P. O. Box 1320, Palo Alto, Calif., is the 242. Conservatively rated at 100 watts input, this all-new, compact unit (only 17" x 12½" x 8¼") has been designed to meet the requirements of commercial craft owners who want high power in a radio-telephone of small dimensions. Provisions for Kaar's remote control unit, which enables use of a radiotelephone from any convenient point on a boat, are built into the 242.



New 100-watt Kaar telephone

The new telephone features speech clipping that results in "more voice power" than is available from conventional circuits, a new anti-fade squelch system, and technical advancements that exceed all present and proposed FCC standards. In addition, there is an automatic noise silencer to minimize the effects of atmosphere and engine interference, as well as a non-blocking input circuit to permit close-range communications. Six channels cover from 2. mc to 4.5 mc or 1.6 mc to 6. mc (depending upon the buyer's requirements), with greatly improved frequency stability through the use of new type plated crystals.

Assuring minimum battery drain with maximum efficiency, the Kaar 242 operates on 12 or 32 volts DC, or 117 volts AC.

New Bowers Chart Protractor

A new simplified, direct reading, and very accurate chart protractor has recently been developed by J. Alan Bowers, 8 Brunswick Road, Montclair, N. J., and is available for $2.50. The protractor is ideal for quick course and position plotting, and no resetting is necessary to check the reading. It does not require reference to the compass rose, and can be used in close quarters—on the side of a bunk or in the cockpit with a partly folded chart.

The Bowers protractor is of transparent plastic, 12¼ x 2⅞ x .040" thick. There is a foot ruler on the bottom edge and a 180-degree scale occupies the left hand side of the protractor.

To use the protractor you lay either long edge on the course desired, then, holding this course, slide the instrument along the chart until the cross lines in the center of the dial intersect either a parallel or meridian. When centered on a parallel, the course and its reciprocal are read from the figures on the outside of the dial where the parallel passes through it. When a meridian reading is taken, the figures on the inside curve of the dial are used.

The protractor may be turned around end for end without affecting the course reading. This choice of position is often very helpful in reaching and intersecting a parallel or a meridian.

BOAT CATCHES

For Month of May

Hailing fares. Figure after name indicates number of trips.

WOODS HOLE (Mass.)

Arnold (4)	23,600	Maria Julia (1)	8,400
Bernice (5)	45,400	Mary & Julia (1)	1,800
Bluefin (2)	21,100	Maureen (2)	12,000
Curlew (6)	21,000	Metacomet (3)	32,100
Dauntless (2)	32,800	Mildred & Myra (5)	78,300
Ebenezer (5)	26,600	Morning Star (3)	4,900
Elizabeth Ann (1)	8,100	Noah A. (1)	900
Gertrude D. (6)	28,800	Old Mystic (5)	80,000
Harvest (2)	1,300	Papoose (3)	13,700
Intrepid (1)	400	Pvt. Frank T. Kessler (1)	700
Isabelle II (2)	6,500	Reliance (4)	8,000
Isabelle J. II (1)	17,700	Rita (3)	55,200
Janet Elise (1)	5,900	Roann (1)	15,700
Jojarono (2)	5,500	Samson Joy (2)	28,600
Kathy Dick (2)	1,800	Sonny & Joyce (1)	1,000
Lillian C. (3)	8,000	Southern Cross (2)	18,500
Little Lady (4)	3,300	Stanley (1)	900
Luann (4)	68,400	Theresa (5)	24,400
Lynn (3)	30,700	Three Bells (2)	18,500
Madeline (3)	16,700	Viking (5)	11,800
Margie L. (3)	15,600	Winifred M. (6)	50,400

Scallop Landings (Lbs.)

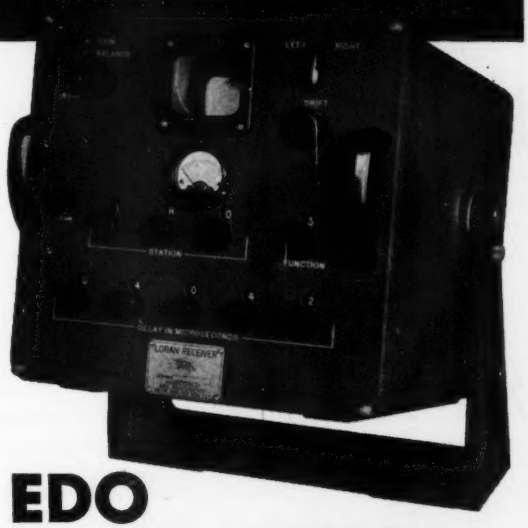
Louis A. Thebaud (1)	9,500	Richard Lance (1)	1,700
Pelican (1)	10,100		

SEATTLE

Halibut Fleet Fishery

Akutan (1)	65,000	Lorelei II (1)	60,000
Alaska Queen (1)	84,000	Lualda (1)	54,000
Albatross (1)	85,000	Lucky Star (1)	47,000
Aleutian (1)	50,000		
Aleutian Queen (1)	55,000	Maddock (1)	12,000
Alma J. (1)	63,000	Marconia (1)	100,000
Alrita (1)	80,000	Marilee Ann (1)	32,000
Angeles (1)	14,500	Martindale (1)	80,000
Anne (2)	61,100	Masonic (1)	60,000
Arlice (1)	50,000	McKinley (1)	86,000
Arne (1)	18,000	Merit (2)	11,000
Arrow (1)	53,000	Mermaid (2)	39,400
Atlantic (1)	45,000	Midway (1)	25,500
Bergen (1)	30,500	Nanna (2)	32,000
Bernice (2)	26,000	National (1)	33,500
Bernice R. (2)	51,000	New Era (2)	83,500
Bonanza (1)	15,700	New Queen (1)	72,000
Borghild (1)	21,000	Nightingale (2)	37,600
		Nordby (1)	46,000
California (1)	24,000	North (1)	58,000
Celtic (1)	58,000	Northern (1)	40,000
Chelan (1)	36,000	Northern Light (1)	58,000
Chelsea (1)	50,000	Nova (1)	28,000
Christian S. (1)	20,000		
City of Seattle (1)	110,000	Oceanus (1)	20,000
Columbia (1)	60,000	Orbit (1)	12,000
Constitution (1)	65,000	Ozzy R. (1)	21,000
Coral (1)	12,000		
		Pamela Rae (1)	60,000
Daily (1)	37,000	Platinum (1)	57,000
Dean (1)	17,000	Polaris (1)	68,000
DeLuxe (2)	29,000	Premier (1)	14,000
Dixie Maid (1)	8,000		
Dolphin (2)	38,000	Recovery (1)	13,000
		Regina (1)	42,000
Eastern (1)	8,500	Republic (1)	58,000
Eclipse (1)	60,000	Roselene (1)	15,000
Eldorado (1)	40,000		
Estep (1)	38,000	St. John II(1)	43,000
Ethel S. (1)	45,500	Salute (1)	67,000
Eureka (1)	8,000	Sanak (1)	54,000
Evening Star (1)	72,000	Satrania (1)	65,000
		Sea Bird (1)	54,000
Faith II (1)	19,000	Seafarer (1)	77,000
Flint (1)	58,000	Seagull (1)	14,500
Flying Tiger (1)	55,000	Seattle (1)	73,000
Fortress (1)	63,000	Sherman (1)	10,000
Forward (2)	34,000	Shirley J. (1)	32,000
Freya (1)	23,000	Signe (1)	16,000
		Sleep Robber (1)	100,000
Hazel H. (1)	22,500	Sonja (1)	22,000
		Soupfin (1)	80,000
Ideal (2)	21,500	Summit (1)	16,000
Ikaros II (1)	31,000	Sunset (1)	50,000
Ilene (1)	60,000	Sylvia (2)	65,000
Inez M. (2)	82,500		
Irene G. (1)	64,000	Tatoosh (1)	12,000
Ivanhoe (1)	17,000	Thor (1)	55,000
		Tongass (1)	65,000
Jane (2)	51,000	Trinity (1)	48,000
J. B. (1)	32,000		
		Vansee (1)	55,000
Kingfisher (1)	15,700		
		Wesley (1)	5,000
Lady Olga (1)	55,000	Western Girl (1)	55,000
Lane (1)	15,500		
Leading Lady (1)	60,000	Yakutat (1)	60,000
Leviathan (1)	50,000	Yaquina (1)	47,000
Liberty (1)	70,000		
Lloyd (1)	28,000	Zenith (1)	60,000

NOW... UP-TO-DATE LORAN at Practical Cost!



EDO

Direct-Reading LORAN

Now you can have the most modern Loran equipment at lowest cost ever . . . for time-saving, fuel-saving navigation accuracy. The new model 262 Edo Loran gives you quick, directly-read position indication with no complicated calculating. Designed by Edo, famed builder of Navy Sonar, underwater detection gear and other marine electronic equipment of *highest possible quality.*

You Want These Superior EDO Features

- Only 28 tubes including cathode ray tube and rectifiers. Means far simpler servicing.
- Single, compact, light-weight, self-contained unit.
- Lower power consumption: 200 watts, 115 volts @ 60 cycles.
- The unit can be mounted on table, overhead or bulkhead.
- Large direct-reading dials especially illuminated for night use. Recessed CRT requires no hood.
- Delay is not stored and cannot drift.

Send for the new brochure on the Edo Model 262 Loran

Find FISH FASTER with EDO FISHSCOPE!

Finest electronic fish finder available. EDO FISHSCOPE locates schooled fish on cathode ray tube, multiplies view 20 to 40 times. Don't be satisfied with less than the best. Increased hauls prove FISHSCOPE's superiority. Write for brochure.

Edo CORPORATION

College Point, L.I., N.Y. SINCE 1925

PFLUEGER HOOKS

Serve you Better!

HUNDREDS OF DIFFERENT TYPES & SIZES REGULARLY STOCKED

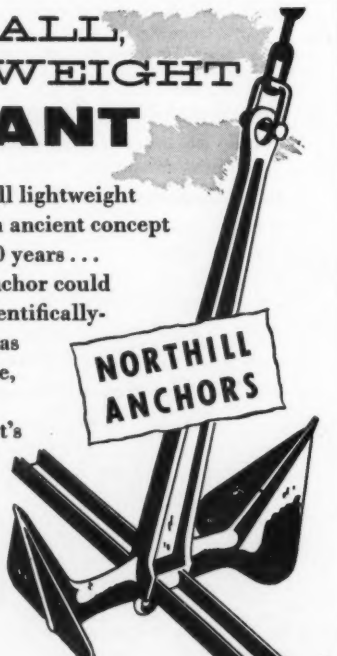
Their sharper points, their greater uniformity of temper, and their longer life can increase your fishing success. Ask your supplier, or write.

THE ENTERPRISE MFG. CO., AKRON 9, OHIO

PFLUEGER (Pronounced "FLEW-GER") | *92 Years of Making Fine Tackle*

SMALL, LIGHTWEIGHT **GIANT**

The original Northill lightweight anchor disproved an ancient concept that had lasted 4,000 years . . . that only a heavy anchor could hold a boat. The scientifically-designed Northill was small, easy to handle, but a giant in holding power. That's why it has been the largest-selling lightweight anchor for 17 years! 3 to 105 lbs. For boats up to 80 ft.



THE GARRETT CORPORATION

AIR CRUISERS DIVISION

BELMAR, NEW JERSEY

PORTLAND (Me.)

Agnes & Elizabeth (2)	119,000	Nora D. Sawyer (1)	5,000
Alice M. Doughty (2)	19,800	Ocean Life (1)	375,000
Alice M. Doughty II (1)	30,000	Quincy (2)	385,000
Andarte (2)	210,000	Rebecca II (3)	33,000
Ariel (3)	10,100	Resolute (2)	88,300
Bobby & Jack (3)	272,300	St. George (1)	210,000
Challenger (6)	50,900	St. Joseph (1)	9,000
Crescent (6)	59,800	St. Joseph II (2)	16,300
Dorchester (1)	180,000	Theresa R. (2)	205,000
Dorothy & Ethel II (4)	98,000	Vagabond (3)	114,000
Elinor & Jean (6)	90,500	Vandal (3)	289,000
Gulf Stream (1)	202,000	Vida E. (1)	17,000
John J. Nagle (1)	90,000	Vida E. II (3)	65,300
Lawson (1)	80,000	Voyager (2)	92,000
Marie H. (1)	2,100	Wawenock (1)	225,000
Mary & Helen (3)	26,500	Winthrop (2)	337,000
Medan (1)	300,000		

Scallop Landings (Lbs.)

Debbie Jo-Ann (1)	17,000	Empress (1)	3,400

NEW YORK

Scallop Landings (Lbs.)

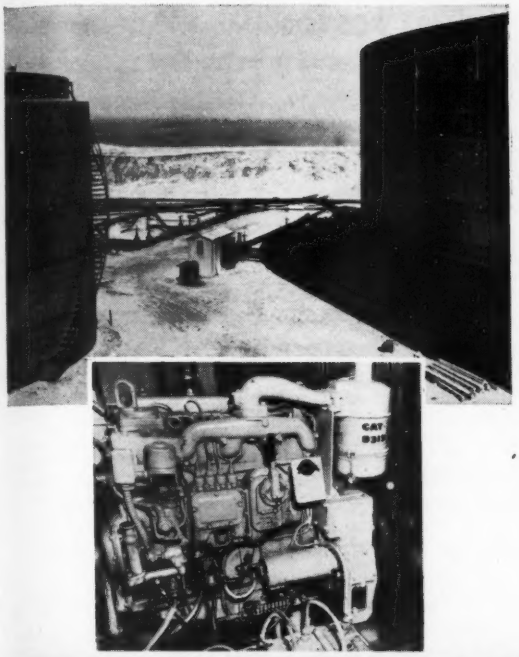
Barbara & Gail (1)	9,900	Muskegon (1)	6,300
Carol-Jack (3)	32,800	Norseman (2)	17,400
Felicia (1)	10,600	Richard Lance (2)	19,700
Miriam A. (2)	17,600	S. No. 31 (1)	5,700

GLOUCESTER (Mass.)

Admiral (1)	66,000	Lady of Good Voyage (1)	100,000
Agatha (5)	548,000	Lady of the Rosary (1)	25,000
Agatha & Patricia (1)	27,000	Linda B. (7)	19,500
Althea (1)	17,000	Little Flower (7)	350,000
American Eagle (6)	286,500	Little Joe (1)	1,000
Andrea G. (1)	110,000	Lone Ranger (4)	9,500
Anna Guarino (8)	26,000		
Ann & Marie (7)	14,000	Malolo (2)	151,000
Annie (14)	32,000	Manuel P. Domingoes (1)	170,000
Anthony & Josephine (8)	191,000	Margaret Marie (2)	98,500
		Marianna II (4)	154,000
Baby Rose (1)	73,000	Maris Stella (1)	170,000
Bonaventure (3)	272,000	Mary Ann (5)	296,000
Bonnie (1)	85,000	Mary Rose (1)	160,000
Bonnie Billow (1)	95,000	Morning Star (7)	259,000
Brighton (1)	85,000	Mother Ann (1)	240,000
		Mother Frances (1)	52,400
Cape Cod (9)	78,000		
Carlannsul (13)	28,000	Nancy & Maria (10)	99,000
Carlo & Vince (5)	198,000	Natale III (7)	361,000
Carmela Maria (3)	43,000	Njorth (3)	8,000
Catherine B. (6)	313,000	No More (9)	10,000
Charlotte M. (1)	50,000		
Cigar Joe (4)	81,000	Olympia (4)	319,500
Clipper (2)	315,000	Our Lady of Fatima (1)	200,000
Columbia (1)	70,000		
Curlew (2)	335,000	Peggy Belle (7)	6,000
Cushmeer (2)	465,000	Pilgrim (1)	60,000
		Pioneer (8)	19,000
Dawn (10)	20,000	P. K. Hunt (1)	30,000
Dolphin (2)	203,000	Priscilla (8)	14,000
Doris F. Amero (1)	53,000	Prosperity (10)	29,600
Dragnet (2)	131,000	Puritan (1)	57,300
Eagle (5)	698,500	Raymonde (1)	84,000
Eddie & Lulu M. (13)	27,000	Rose & Lucy (5)	234,000
Edith L. Boudreau (1)	90,000	Rosemarie (3)	187,000
Emily H. Brown (1)	180,000	Rosie & Gracie (5)	123,500
Estrella (2)	410,000		
Etta K. (5)	45,500	St. Anna Maria (3)	154,500
Evalina M. Goulart (1)	40,000	St. Anthony (2)	257,000
Eva II (9)	21,500	St. Cabrini (6)	275,000
Evelyn C. Brown (1)	295,000	St. John (7)	16,500
		St. Joseph (1)	25,000
Falcon (18)	59,000	St. Mary (7)	281,500
Florence & Lee (2)	430,000	St. Nicholas (2)	286,000
Frances R. (6)	248,500	St. Peter (3)	141,000
Frankie & Jeanne (12)	17,000	St. Peter III (6)	253,500
		St. Providenza (6)	23,500
Gaetano S. (2)	265,000	St. Rosalie (3)	203,000
Gertrude E. (10)	14,500	St. Stephen (8)	15,000
Giacoma (14)	26,000	St. Victoria (4)	476,000
Golden Dawn (4)	42,500	Salvatore & Grace (6)	350,500
		Sea Hawk (1)	120,000
Hazel B. (1)	80,000	Sea Rambler (2)	80,000
Helen B. (4)	145,500	Sebastiana C. (5)	308,000
Holy Family (1)	170,000	Serafina N. (3)	162,500
Holy Name (6)	175,000	Serafina II (5)	248,500
		Sunlight (3)	263,000
Ida & Joseph (5)	350,000	Swallow (1)	87,000
Immaculate Conception (8)	223,000	Theresa M. Boudreau (2)	440,000
		Tina B. (2)	140,000
Jackie B. (4)	131,000	Tipsy Parson (13)	25,500
Jackson & Arthur (8)	17,500		
J. B. N. (5)	372,000	Veronica N. (1)	1,000
Joseph & Lucia (1)	181,000	Victoria (5)	5,000
Josie (1)	2,500	Villanova (1)	240,000
Josie II (13)	46,500	Vincie N. (3)	297,000
Judith Lee Rose (2)	570,000	Virginia Ann (2)	24,000
Killarney (3)	312,000	White Owl (5)	9,500
Kingfisher (1)	225,000	Wild Duck (2)	300,000

Scallop Landings (Lbs.)

Francis L. MacPherson (1)	11,000	Pocahontas (1)	11,000
Laura A. (1)	11,000	Stephen R. (2)	22,000



24 HOURS A DAY SERVICE

that's why Northville Dock Corp. picks CAT Engines!

Three Caterpillar Diesel Engines handle important jobs for Northville Dock Corporation at their Riverhead, L. I. oil terminal.

Two Cat D315s transfer the oil after it is pumped through a mile long offshore underwater pipeline into 11,000,000-gallon storage tanks. Each of these Cat Diesel Engines drives a 1500 GPM centrifugal pump and keeps a constant stream of big oil trucks hustling. A third Cat stands by ready to guarantee 100% power and lights for 24 hours per day operation should commercial power fail.

This progressive firm chose Cat Diesels because of their excellent service, proper size, freedom from downtime, economy of operation and good dealer service. And that's exactly what they're getting! You'll be just as pleased when you put Caterpillar Diesel Power in your boat or on your dock . . . backed by H. O. Penn Machinery Co.!

H. O. PENN MACHINERY CO., INCORPORATED

Caterpillar and Cat are Registered Trademarks of Caterpillar Tractor Co.

140th Street and East River, New York, N. Y.
1561 Stewart Avenue, Westbury, L. I., N. Y. Dutchess Turnpike, Poughkeepsie, N. Y.
136 Day St., Newington Conn. Route 17, Tuxedo Park, N. Y.

CATERPILLAR
sales • parts • service

ROCKLAND (Me.)

Araho (3)	284,000	Mabel Susan (4)	124,000
Carlene (2)	12,500	Ocean (1)	280,000
Elin B. (4)	179,000	Squall (2)	625,000
Ethel B. (5)	13,500	Storm (2)	600,000
Flo (4)	268,000	Surf (3)	905,000
Helen Mae II (2)	125,500	Tide (2)	450,000
Little Growler (3)	128,000	Wave (2)	625,000
Louise G. (3)	96,000		

Scallop Landings (Lbs.)

Pocahontas (1)	11,000	Rhode Island (2)	22,000

NEW BEDFORD (Mass.)

Adventurer (4)	52,400	KelBarsam (3)	51,800
Annie Louise (4)	52,100		
Annie M. Jackson (3)	54,100	Lorine III (4)	91,700
Austin W. (2)	32,000		
		Major J. Casey (3)	72,400
Barbara M. (4)	104,000	Marie & Katherine (3)	50,700
		Mary E. D'Eon (3)	60,000
Cap'n Bill II (3)	112,500	Mary Tapper (3)	98,500
Carl Henry (2)	76,500	Midway (3)	127,000
Charles E. Beckman (5)	55,100	Molly & Jane (3)	61,900
Christina J. (4)	135,500		
Christine & Dann (4)	51,900	Nautilus (1)	70,700
Comber (4)	84,500		
Connie F. (3)	62,000	Olive M. Williams (1)	16,300
Elva & Estelle (2)	24,400	Pam Ann (1)	76,700
Eugene & Rose (3)	58,500	Pauline H. (3)	204,300
Eunice-Lilian (2)	55,500	Phyllis J. (4)	43,300
Evelina M. Goulart (1)	48,500		
		Roberta Anne (2)	26,500
Falcon (2)	34,200	Rose Jarvis (2)	22,500
Famiglia (2)	37,800	Rosemarie V. (3)	94,300
Flavia (1)	1,600	Ruth & Helen (2)	25,100
		Ruth & Nancy (3)	32,200
Gannet (1)	41,200		
Gladys & Mary (4)	168,700	St. Ann (3)	82,400
Growler (4)	122,500	Sampson Joy (1)	13,000
		Shannon (3)	64,600
Harmony (4)	99,700	Solveig J. (3)	169,400
Hope II (3)	47,200	Stella Maris (2)	32,300
		Sunbeam (2)	55,800
Invader (3)	112,500	Susie O. Carver (3)	37,100
Isabelle J. II (1)	8,000		
Ivanhoe (4)	49,600	Teresa & Jean (2)	96,100
		Two Brothers (4)	50,300
Jacintha (3)	181,300		
Janet Elise (2)	10,000	Venture I (3)	122,100
Janet & Jean (3)	89,500	Victor Johnson (2)	37,200
Joan & Tom (2)	35,000	Viking (3)	132,700
Julia DaCruz (1)	26,900		
		Whaler (1)	33,900

New Bedford Scallop Landings (Lbs.)

Abram H. (2)	22,000	Laura A. (1)	11,000
Agda W. (2)	13,000	Lauren Fay (2)	22,000
Aloha (3)	33,000	Linda & Warren (2)	19,500
Alpar (3)	33,000	Linus S. Eldridge (3)	33,000
Amelia (3)	33,000	Louis A. Thebaud (1)	9,800
		Louise (3)	33,000
Babe Sears (2)	22,000	Lubenray (2)	22,000
Baltic (2)	21,200		
Beatrice & Ida (1)	11,000	Malene & Marie (2)	22,000
B. Estelle Burke (3)	33,000	Marjorie M. (2)	9,500
Bobby & Harvey (2)	22,000	Marmax (3)	33,000
Brant (3)	33,000	Mary Anne (3)	33,000
Bright Star (3)	33,000	Mary J. Hayes (2)	22,000
Brother Joe (2)	13,500	Mary J. Landry (2)	18,200
		Michael F. Densmore (1)	7,000
Camden (2)	22,000	Moonlight (3)	33,000
Carol & Estelle (2)	22,000	Muskegon (1)	10,500
Catherine & Mary (3)	33,000		
Catherine C. (3)	33,000	Nancy Jane (2)	22,000
Charles S. Ashley (3)	32,500	Nellie Pet (3)	33,000
Clipper (2)	22,000	New Bedford (3)	33,000
		Newfoundland (2)	22,000
Dartmouth (3)	33,000	Noreen (3)	33,000
Dorothy & Mary (2)	16,000		
		Pearl Harbor (2)	22,000
Edgartown (3)	33,000	Pelican (1)	11,000
Eleanor & Elsie (3)	33,000	Porpoise (2)	22,000
Elizabeth N. (3)	26,700		
Empress (1)	10,000	Rita B. (2)	21,000
Enterprise (2)	22,000	Rosalie F. (2)	22,000
Eugene H. (3)	33,000	Rush (3)	33,000
		Ruth Moses (3)	33,000
Fairhaven (3)	33,000		
Felicia (1)	11,000	Sea Ranger (3)	33,000
Flamingo (3)	33,000	Sippican (3)	33,000
Fleetwing (3)	33,000	Smilyn (2)	22,000
Florence B. (3)	33,000	Stanley M. Fisher (3)	33,000
Friendship (2)	22,000		
		Ursula M. Norton (3)	33,000
Jerry & Jimmy (2)	22,000		
Josephine & Mary (2)	21,000	Vivian Fay (2)	22,000
Kingfisher (2)	22,000	Wamsutta (2)	21,000
		Whaling City (2)	22,000

STONINGTON (Conn.)

America (1)	800	Lt. Thos. Minor (10)	14,400
Averio (12)	8,800	Lisboa (1)	600
Bette Ann (17)	12,500	Little Chief (16)	19,800
Carl J. (14)	34,600	Marise (16)	20,600
Carolyn & Gary (16)	18,000	Old Mystic (4)	12,000
Connie M. (10)	15,300	Pvt. Frank Kessler (1)	600
Fairweather (9)	14,800	Theresa (2)	2,800
Five Sisters (2)	2,600	Trina Lea (7)	9,400
Irene & Walter (14)	31,600	Weezie May (2)	3,500
Jane Dore (18)	14,600	William B. (14)	31,200

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Angie & Florence (2)	39,400	New Star (2)	168,600
Arlington (3)	388,800	Notre Dame (3)	103,500
Atlantic (3)	225,500		
		Ocean Clipper (3)	123,400
Bay (1)	65,000	Ocean Wave (2)	63,500
Bonnie (1)	114,500	Ohio (1)	60,500
Bonnie Billow (1)	29,900	Olympia LaRosa (3)	103,800
Bonnie Breaker (2)	87,900		
Brighton (2)	188,300	Pam Ann (1)	72,000
Buzz & Billy (3)	107,200	Patty Jean (3)	322,400
		Phantom (1)	125,500
Cambridge (2)	241,700	Plymouth (2)	108,800
Caracara (4)	156,600	Puritan (2)	103,100
Carmelia Maria (1)	8,100		
Charlotte M. (2)	85,000	Racer (2)	217,000
Comet (3)	205,300	Raymonde (3)	269,600
		Red Jacket (2)	123,000
Doris F. Amero (1)	15,500	Regina Maria (1)	56,500
		Roma (1)	2,800
Edith L. Boudreau (1)	95,000	Rosa B. (2)	175,600
Elizabeth B. (2)	191,700	Rosie (3)	57,700
Ethelena (4)	111,100	Rush (1)	53,400
Flying Cloud (3)	398,200	St. Angelo (4)	130,200
Four (2)	152,500	St. Anna (1)	1,200
4C688 (2)	2,300	St. Anthony (1)	100,000
4-M-729 (1)	600	St. Joseph (2)	78,900
		St. Marco (3)	101,000
Geraldine & Phyllis (4)	264,600	St. Peter (1)	47,000
		St. Peter III (1)	62,000
Hazel B. (1)	104,500	St. Rosalie (1)	35,700
		Salvatore (8)	13,900
Jane B. (2)	131,200	San Calogero (1)	5,900
J. B. Junior (1)	101,700	Sant' Antonio II (1)	3,700
Jeanne D'Arc (3)	174,100	Santa Maria (4)	82,000
Jennie & Lucia (3)	126,100	Santa Rita II (3)	30,200
Joan & Tom (1)	15,400	Stanley B. Butler (2)	131,000
Josephine P. II (3)	87,500	Star of the Sea (6)	278,600
		Swallow (2)	149,000
Lady of Good Voyage (1)	32,600		
Lady of the Rosary (2)	73,000	Terra Nova (3)	232,900
Lawrence Scola (3)	49,500	Texas (3)	240,700
Leonard & Nancy (2)	46,800	Thomas D. (2)	72,000
Luckimee (2)	203,500	Thomas Whalen (2)	126,700
		Tina B. (1)	90,000
Magellan (3)	79,700		
Manuel F. Roderick (2)	113,500	Weymouth (3)	241,400
Mary & Joan (3)	215,500	William J. O'Brien (2)	136,000
Michigan (2)	184,500	Winchester (3)	311,300
Mother Frances (2)	109,700	Wisconsin (2)	195,500

Georgia Fisherman Gets New Trawler "Lady Zelle"

R. E. August of Savannah, Georgia, has a new 55' Hatteras Trawler turned out by the Morehead City (N. C.) Shipbuilding Corp. She is named the *Lady Zelle*, and will operate out of Thunderbolt.

The main engine of the *Lady Zelle* is a General Motors 6-71 Diesel, equipped with Morse controls. The auxiliary generator is a 750-watt Onan, and there are four 8-volt Surrette batteries.

The boat has a 1½" gasoline-driven Marine Products pump and a 1¼" Jabsco pump driven from the winch shaft. The engine room contains two 800-gallon fuel tanks. The winch is a 515½ T Stroudsburg with two 900-foot spools of 7/16" Wickwire wire rope for towing and 300 feet of ⅜" Wickwire wire rope for the try net.

Other equipment includes a 65-pound Danforth anchor with 600 feet of 1" anchor rope, a One-Mile-Ray searchlight and a 5" Wilfrid White Constellation compass.

Fish Landings Drop

Fishery products landed at Georgia ports during February totaled 618,000 pounds. Compared with the same month last year, this was a decrease of 14 percent. The leading species were hard crabs, shad and shrimp, with these three species accounting for 95 percent of the total landings.

New York Landings Increase

Landings of fish and shellfish in the Marine District of New York during February totaled 4.0 million pounds, valued at $607,000. This was an increase of 20 percent in volume, compared with landings during February 1956. The increase was due primarily to greater landings of butterfish, cod, blackback, whiting and hard clam meats.

Alabama Area Closed to Trawlers To Protect Oyster Reefs

The Alabama Department of Conservation has closed all trawling in an area lying between Coffee Island and Point of Pines to protect oysters to be planted on reefs in that area. Since trawls cannot be dragged over oyster beds, the area is closed to all trawling permanently.

The area lies inshore of a line beginning at a point on the southernmost tip, Point of Pines, and extends eastward to the northernmost point of Coffee Island. The area is bordered on the east side by Portersville Bay, which has already been closed to shrimping.

Excellent Snapper Catches

Despite the hot weather which has been setting in recently, Star Fish & Oyster Co. of Mobile report that their boats have had wonderful catches so far this year. Their boat *Baby Ann* returned late last month with a catch of 25,000 lbs. of snapper and grouper.

The Star Company's new boat *Lois G.* is being built by Krebs, and is expected to be completed by September 1.

Fishery Production Increases

During the first two months of 1957, a total of 1.2 million lbs. of seafood was landed at Alabama ports, an increase of 117,000 lbs. over the landings during the corresponding period of 1956. The increase was primarily due to heavier landings of mullet, blue crabs, shrimp and oysters.

Mississippi to be Base for Second Exploratory Vessel

The Fish & Wildlife Service last month announced a scheduled expansion in fishery exploratory work in the Gulf of Mexico, and stated that a second vessel, the *Silver Bay* of Portland, Me., is being added to the research fleet. The research vessel *Oregon* has been operating out of Pascagoula for several years.

The *Silver Bay*, a 96-ft. New England type fishing trawler, was scheduled to arrive in Pascagoula late last month. She carries a crew of eight and is captained by Francis Folger of New Bedford, Mass.

The trawler will be used in such projects as continuation of exploration for deep-water royal red shrimp, trawling for red snapper, anchovies and sardiosa-like fish and exploratory dredging for scallops and clams.

Landings Show Increase

During the first two months of 1957, total landings of fish and shellfish amounted to 2.6 million lbs.—a gain of 91,000 lbs. compared with the same period of 1956. The production of oysters accounted for 61 percent of the total landings for the two-month period of 1957.

Cummins Engine Service at Biloxi

Cummins Sales and Service, Inc., of Fort Worth, Tex., has opened a new conveniently located shop and office at Biloxi, Miss. The installation provides sales and engineering assistance, marine Diesel maintenance, and ready availability of Cummins engine parts. Complete boat and engine financing also is available. A pier leads to the back of the shop from an adjacent boat slip which opens into the Gulf of Mexico .

The Biloxi location is headed by District Manager of Diesel Sales and Service, J. J. Medlin, formerly Service Manager for Cummins Sales and Service, Inc., at New Orleans and a veteran in marine Diesel work. Biloxi Diesel Store and Parts Manager is F. E. Cushman. Cummins Sales and Service, Inc. has marine Diesel maintenance facilities and sales offices at New Orleans, Houston, and Palacios, in addition to Biloxi.

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GENERAL:

Wooden hulls are in A-1 condition and are equipped with chains, windlasses and anchors. Boats sleep 15 and are complete with galley, head, etc. Deck houses presently equipped with 30 Kearfott windows, approximately 20" x 30" each. SONAR, RADAR AND FATHOMETER EQUIPMENT PRESENTLY ABOARD, but since these are service instruments, we make no claims as to their adaptability for specific uses.

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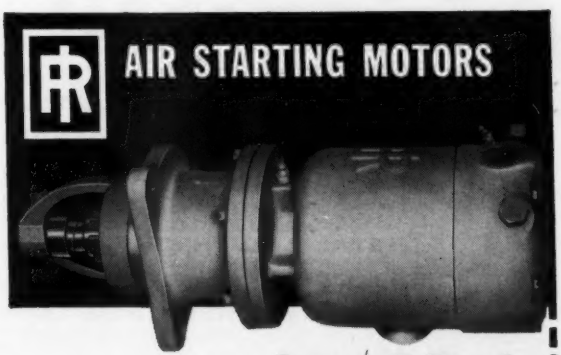

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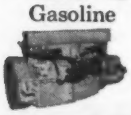

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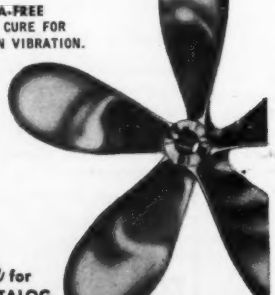

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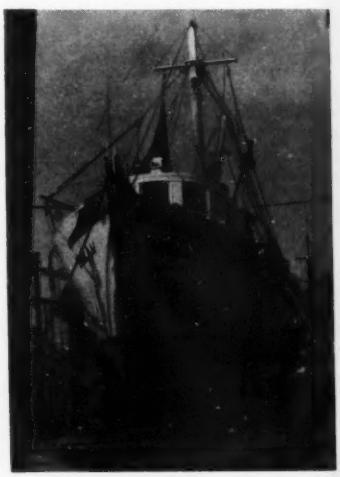
Texas Has New Tuna Fishing Enterprise

Sydney Herndon, owner of a seafood business in Aransas Pass and Corpus Christi, and J. T. Stellman, operator of a marine railway and towing service in Aransas Pass, have embarked on a new enterprise—tuna fishing in the Gulf of Mexico.

The fishing will be carried on far outside the limits of the continental shelf, over depths of 6000 feet, with giant trotlines, 12 miles or more long, made of nylon. On these are 1000 hooks dangling 100 feet beneath the surface of the sea.

The new firm purchased two 75 ft. steel-hulled boats which they named the *Blue Fin* and *Yellowfin*. On her first trip out the *Blue Fin*, in command of Capt. Bill Roland, sank in the Gulf of Mexico 10 miles south of Port Aransas. The *Reliable*, a shrimper accompanying the *Blue Fin* to Campeche, picked up the captain and his two crewmen.



The "Enola W", 50' shrimper owned and skippered by Capt. Eddie P. Hebert of Port Isabel, Texas. She uses Humble fuel and lubricating oil, and is equipped with Caterpillar D13000 Diesel, rated 120 hp., Surrette batteries, Bendix depth sounder, Kaar radiotelephone, Northill anchor, Wilfrid White Constellation compass and Stroudsburg hoist.

Herndon recently has moved his 17-trawler shrimp fleet from Corpus Christi to Aransas Pass. He is now operating a wholesale and retail business on the T-head in Corpus Christi, the former location of his processing plant.

He has also taken over all the property and processing equipment owned by Patterson Seafoods at Aransas Pass, and negotiated with the city for a five-year lease on the site.

White Shrimp Production Starts

White shrimp started to run in the middle and south bays the first of May, and large catches were made by small bay trawlers. These trawlers, working in the middle coast bays, were catching up to 1500 pounds of white shrimp per day. The shrimp graded from 36 to 50 count and below.

Incomplete reports on landings of shrimp for the first five months of 1957 show 8,930,500 pounds of heads-off, as compared with 6,704,800 pounds for the same period in 1956.

Shrimp landings at principal Texas Gulf ports for May totaled 1,476,700 pounds, some 125,000 pounds below production at the same ports during April. The Brownsville-Port Isabel area lead other areas with Aransas Pass-Rockport second.

Bill Sets Closed Shrimp Season in Two Bays

A bill was passed and sent to the Governor last month restricting the upper end of Galveston and Trinity Bays to gill netting and providing a closed season on shrimping (with limitations) from January 1 to August 31. Amend-

ments to the bill also allow continued use of trammel nets in the area, and do away with the 1¾" restriction on shrimp net mesh.

Summerlin Plans to Build New Shrimp Plant

T. P. Summerlin of Ft. Myers, Fla., has decided to move his fleet of 30 shrimpers to Aransas Pass, Texas, where he intends to build docks, wharves and a seafood processing plant.

Oyster Production Shows Big Increase

Oyster production came to a halt early in May, and official reports show the yield for the first four months in 1957 to be 22,380 barrels, while in the same period of 1956 some 5,740 barrels were harvested. This represents an increase of 400 percent for this year.

Protest Sanctuary for Fish

Commercial fishermen in the Rockport and Fulton area are protesting a bill introduced recently by Rep. Harold Parish. The bill would close Mesquite Bay to all fishing and establish it as a fish sanctuary, but would leave the so-called sanctuary open to all fishermen with pole and line, trolling lines, throw lines, trotlines, rods and reels or similar devices.

Commercial fishermen feel that the attempt is merely a means of ruling commercial fishermen out of the area without curbing the sports fishermen. Petitions against the bill are being circulated in the community by W. S. Coaker, a commercial fisherman, and others who have promised an all-out fight against the measure.

Crawford Heads Water Development Association

Carlton Crawford has recently been named president of the Texas Mid-Coast Water Development Association. This new organization is taking an active part in pushing legislation for the construction of a deep-water pass at Pass Cavallo and a channel into Matagorda Bay. This legislation would be beneficial to shrimp vessels operating out of Texas.

National Steel Tuna Clippers

(Continued from page 15)

not found in many clippers. Most important of these is a watertight bulkhead on the main deck aft of the galley and stretching the full width of the ship. There is one watertight door connecting galley and engine room through this bulkhead.

"United States" Makes Good Maiden Trip

The *United States*, eighth 127' tuna clipper launched by National Steel, returned to port May 13 with her maiden trip of 340 tons of yellowfin and skipjack, caught during an 83-day voyage. This vessel, and the five tuna clippers which immediately preceded her, are all powered by a Fairbanks-Morse 960 hp., Model 38D8⅛, 6-cylinder, 720 rpm., opposed piston, direct reversing, marine propulsion Diesel. The engine is furnished with Western Gear's Sea-Master MGV Model 210 reduction gear with 3:1 ratio.

The tuna clippers have Monel Shafts, Goodrich Cutless rubber bearings, and Fairbanks-Morse pumps and motors. Auxiliary equipment on the vessels includes Murphy Diesels, Model #24, 6-cylinder, 4-stroke cycle, 6⅜" bore, 6½" stroke, developing 191 continuous horsepower at 1200 rpm.

The *United States* has four Worthington 6" x 6" ammonia compressors, each driven by a 30 hp. electric motor; Sperry magnetic compass pilot, Raytheon "Fathometer" depth sounder, a five-bladed propeller, and a 125 kw. Electric Machinery Mfg. Co. generator.

Since World War II, National Steel has built 30 fishing vessels, including shrimp boats for service in the Gulf of Mexico. C. Arnholt Smith is president of the firm.

"THE CAPITOL"
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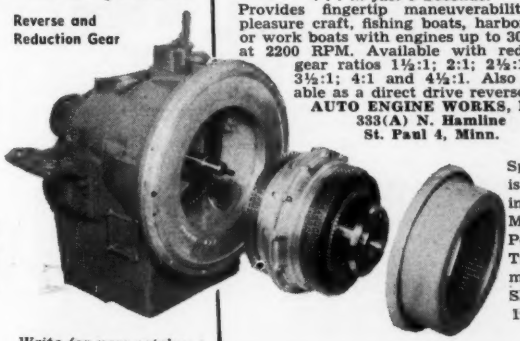

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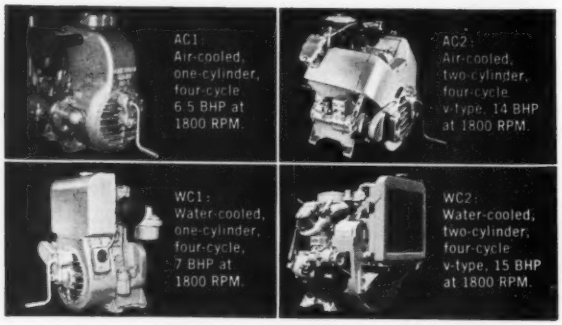

AC1: Air-cooled, one-cylinder, four-cycle, 6.5 BHP at 1800 RPM.

AC2: Air-cooled, two-cylinder, four-cycle, v-type, 14 BHP at 1800 RPM.

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WC2: Water-cooled, two-cylinder, four-cycle v-type, 15 BHP at 1800 RPM.

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Rhode Island Draggers Making Good Trash Fish Catches

An all-time record landing of 6,000,000 pounds of trash fish was made the last week in April at Point Judith. Unable to process all of the catch, 3,000,000 pounds were shipped to plants at Gloucester and Woburn, Mass. Practically all of the fish landed were taken in only a few hours of fishing off Block Island in a location known to fishermen as Deep Hole.

More than 40 fishing draggers, about 90 percent of them members of the Point Judith Fishermen's Cooperative, collected approximately $53,000 for the landings. Other craft landing were for the most part registered in Connecticut, but have used the Rhode Island port since the trash fish processing plant began operating there six years ago.

In the past two years the trash and edible fish landings at Point Judith have increased substantially to a point where the Cooperative is asking the State for additional land to consolidate and expand its facilities. More docks are urgently needed, officials say. However, there is virtually no chance for more piers this year because funds were not requested by the State Division of Harbors and Rivers for this purpose.

Landings Show Increase

Landings of commercially-caught fish and shellfish at Rhode Island ports during February amounted to 4.2 million pounds valued at $314,000. Compared with the 3.9 million pounds valued at $273,000 landed during the same month of last year, this was an increase of 7 percent in volume and 15 percent in value. Larger landings of butterfish, yellowtail, scup and hard clams were primarily responsible for the increased February landings.

Studying Salt Water Fish

Stonington fishermen are aiding a University of Rhode Island student who is studying to get a degree in zoology. Bernard J. Gordon of Pawcatuck wants to determine the various species of fish found off the Rhode Island and Connecticut coasts, and has requested the aid of the Stonington fishing fleet toward that end. It is believed that some 175 different species can be found in these waters.

His project is to compile a systematic record of all salt water fish in this section, including dates of appearance of migratory species, abundance and annual fluctuations, feeding habits and a list of scientific and local names.

Origin of Nautical Term "Knot"

A "knot" is a unit of velocity equal to one nautical mile (about 6,080 feet) an hour. The term was used in former times when a knotted line and old-fashioned sand glass were the equipment used to estimate the speed of a vessel.

The sand glasses used were similar to those sometimes employed nowadays for timing eggs, in which the proper time for cooking is measured by the time taken for sand to run down from one end of a two-bulbed glass to the other. A common sand glass used at sea had sufficient sand to require 28 seconds to run down.

The line had a zero mark and at intervals of about 47 feet was knotted with pieces of string or rag. One end of the line, with a chip of wood attached, was thrown overboard. As the zero mark passed the rail the glass was inverted and the number of knots that ran out were counted during the time taken for the sand to run down. Since the distance between knots was the same proportion to a nautical mile as 28 seconds to an hour, the number of knots was equal to the speed of the ship in nautical miles per hour. Thus the number of nautical miles an hour is designated as the number of knots, and it is incorrect to say "knots per hour."

Maryland to Study Potomac Oyster-Producing Potential

A resolution was introduced in the Senate at the last session of the State Legislature which authorizes President of the Senate Louis Goldstein to appoint three Senators from the Eastern Shore and three from the Western Shore to serve on a committee to make an investigation of the Potomac oyster-producing potential.

There is a great divergence of opinion regarding the present condition of Potomac River oyster bars, and it is believed that an examination of the oyster bars will determine the quantity of oysters, in what depth of water they are growing, whether taking oysters from the deeper part of the river is impracticable with shaft tongs, whether many oysters have died in the deeper waters, etc.

The Department of Tidewater Fisheries will be asked to make available to the committee statistics, charts, reports, boats, personnel and such other assistance as may be required in order to do a thorough job.

Rock Crabs Invade Chincoteague Bay

Large numbers of rock crabs have been caught in Chincoteague Bay recently. The watermen report the capture of up to three bushels per day of this species in their crab pots in Sinepuxent, Newport and upper Chincoteague Bays. This crab is utilized commercially in the New England area, but has not been of commercial importance in Maryland.

It is believed these crabs moved into the bay area from the Atlantic Ocean through the Ocean City Inlet and that they will return to the ocean as soon as water temperatures rise.

New Type Clam Dredger

A new type clam dredger is now under construction by Stanley Vansant in Piney Neck for Charles Ford of Queenstown. The center well will let the hydraulic dredge down to the bottom, and workers can take off the clams from both sides as they come up the conveyor. The boat is 40 ft. long, 14 ft. wide and 20 inches high at the bow. It will be powered by two automobile engines, one on each side of the well, with two rudders and two propellers.

If for some reason clamming is closed, or the dredge doesn't work as it should, it can be quickly converted into a pile driver. The entire craft will be housed so that clamming can be done regardless of the weather.

Get Federal Grant for Study of Blue Crab

A Federal grant of $75,000 has been received by the University of Maryland's seafood processing laboratory at Crisfield, for an investigation of cooking, handling and distribution problems of the blue crab meat industry. The study will be under the general supervision of the Chief of Mid-Atlantic and Gulf research; and Dr. George Wharton, chairman of the Department of Zoology at College Park.

The program will include detailed studies of sterilization techniques on a semi-commercial scale, including boiling and steaming; and shelf-life of the finished crab product. Shelf-life refers to the period of time between cooking and spoilage of crab meat.

Other areas of research on the contract will include packaging and distribution techniques and development of a better product-cooling procedure. During the study, Dr. Robert A. Littleford, in charge of Crisfield staff activities, and Dr. Melvin Benard, bacteriologist, will supply visual aids and advice to members of the industry, and personnel consultation services during travel to other processing areas of the U. S.

It is anticipated that successful completion of these projects will improve the product, stabilize the industry economically, and conserve the natural resources on which the industry is based, by increasing the yield of crab meat per crab.

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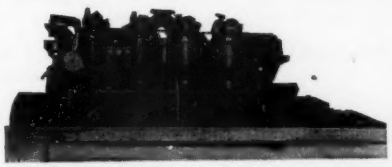

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Raytheon Manufacturing Co., 138 River St., Waltham 54, Mass.
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Detroit Diesel Engine Div., General Motors Corp., Series 51, 71 and 110 Marine Diesels, 13400 W. Outer Drive, Detroit 28, Mich.
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ANGLO-SOVIET AGREEMENT of May, 1956, came into force recently. It provides that British vessels may fish in waters of Barents Sea up to a distance of three sea miles from low water mark in three specified areas.

PLASTIC SHRIMP CONTAINERS have been introduced by a British firm, which is using them for frozen shrimp. One size container is a consumer pack shaped like a sardine can.

JAPAN'S EXPORTS OF FISH and fish preparations (mostly canned and frozen fish and shellfish) to all countries reached record high of 196,489 metric tons, valued at $120.6 million, in 1956. This was an increase in value of 59.5 percent as compared with 1955. Of these exports, 46.8 percent were shipped to United States.

NORWEGIAN COD LANDINGS as of March 30, including spawning cod and Finnmark young cod, amounted to 52,008 metric tons. Last year during same period cod fisheries yielded 96,985 metric tons. Bad weather has hampered fishing this year to a great extent in Lofoten area district, but south of that area the cod fishery has been much better than in recent years.

PORTUGUESE GOVERNMENT has ordered a reorganization of its fishing and canning industry. One of principal aims of this decree-law is to foster sale of Portuguese sardines in olive oil in hitherto underdeveloped markets, such as United States.

BRITISH SUBSIDIES provided for fishermen in near and middle waters, including inshore fishermen, since 1939, total close to $58.5 million.

JAPANESE FISHING COMPANY plans to send 5 vessels to Brazil for fishing in Atlantic waters. Fleet will consist of 4 trawlers of about 100 tons each and 1 purse-seiner of 190 tons. This is an exploratory venture.

PANAMA SHRIMP CATCH during 1957 season may reach 3 million pounds (red shrimp). This would compare with 600,000 pounds taken in 1956 season.

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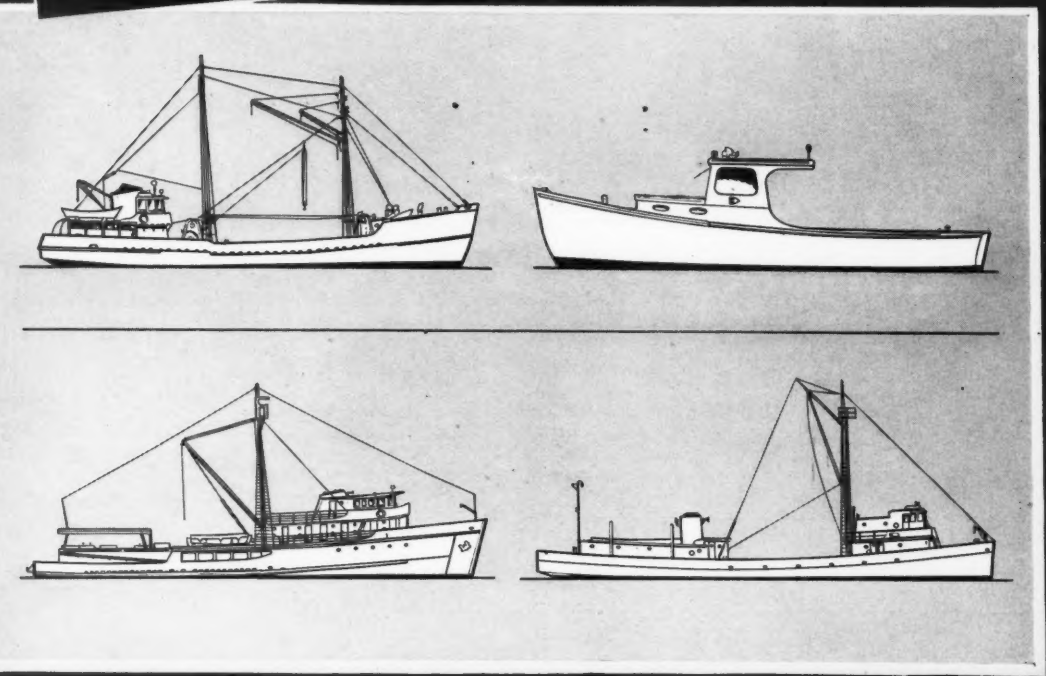

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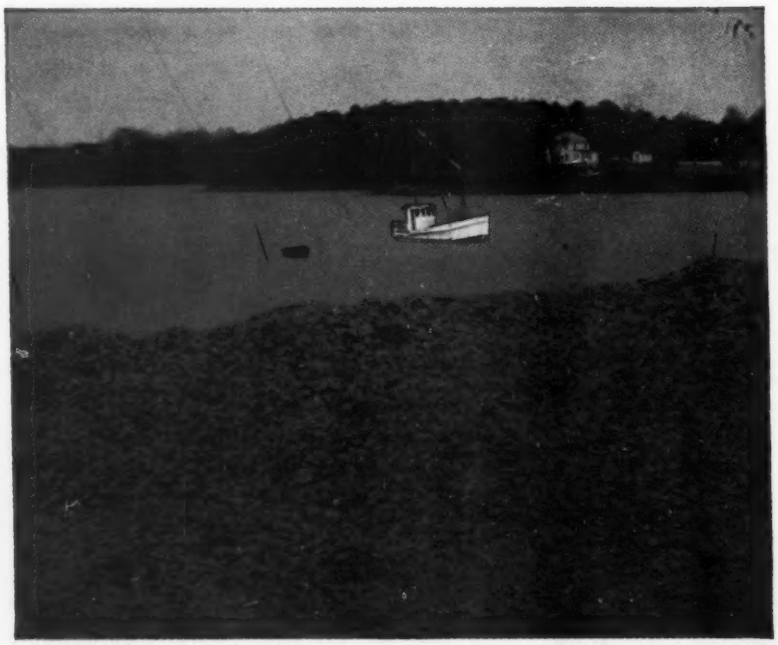
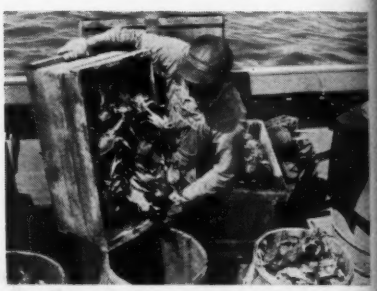
Chrysler Marine Engines



OYSTER SHELLS in great piles line the bank of Robertson's Creek near Remlick, Virginia.

JOSEPH ROY KING owns two Chrysler-powered boats, has operated Chrysler Engines for 12 years: "I *depend* on plenty of power," says King. "My Chrysler Engines give me power when I need it – and no trouble."



LEWIS WYNDER BROWN has owned a Chrysler-powered boat for 13 years. "I've never lost a day's work with the engine," Brown says. "She has never failed to kick over. She handles well and idles sweet."

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OYSTERING and crabbing on the York and Rappahannock Rivers and into Chesapeake Bay demands rugged dependable power. Many boats pull two heavy dredges 10 to 12 hours a day – digging and chopping into the river bed. The clutch is used as often as 125 times a day. Full loads run as high as 600 bushels of oysters. And there's always the threat of sudden squalls. It takes a real engine to stand up to these demands year after year after year. That's why so many boats are powered by Chrysler.

J. W. FERGUSON has been oystering for 32 years, now owns three Chrysler-powered boats. "Chrysler Engines have always given me trouble-free performance," says Ferguson. "Two years ago I sold my son a 14-year-old Chrysler engine. She's still a smooth running engine today. All we've ever done is change the rings."

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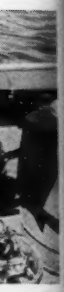

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